SAINT BARTHOLOMEW'S HOSPITAL JOURNAL

FEBRUARY 1950

VOL. LIV No. 2

CONTENTS

Editorial 24

Swellings of the Scrotum, by C. V. Braimbridge, C.B.E., M.V.O. ... 25

Retirement of Professor Hopwood ... 26

Fat Absorption in Man, by Professor A. C. Frazer 27

The Christmas Shows 33

A Manual of Anatomy, by Anon ... 34

William Giffard, Man-Midwife ... 37

Vacation Vacancy, by J. F. C. ... 41

Cells of Harlech, by M. A. Smith ... 42

Correspondence 43

Thoughts on the Present Discontents, by Professor E. L. Kennaway.

The Cambridge Graduates Club of St. Bartholomew's Hospital, by H. J. Burrows and R. A. Shooter.

Correction: P.U.O., by Gunaratnam Cooke.

The First Account of Calcified Pericardium? 43

Sport 44

Book Reviews 44

Examination Results 46

House Appointments 47

INSURANCE
for
YOURSELF

In these days a Personal Accident Policy is more of a necessity than ever before

Full information regarding the "Car & General" Personal Accident Policy will be sent without obligation. The same high Standard of security and service which characterises "Car & General" Motor Policies applies to every other class of business transacted by the Company.

CAR & GENERAL
INSURANCE CORPORATION LIMITED
83 PALL MALL, LONDON, S.W.1

The Chas. H. Phillips Chemical Co. Ltd

For many years the Chas. H. Phillips Chemical Company has devoted its special resources to perfecting a range of antacid products for the alleviation of hyperacid conditions in patients of all ages.

These preparations by their consistently high quality have earned the confidence of the Medical Profession, and by their proved efficacy have gained wide acceptance from men and women in all walks of life.

An antacid dentifrice, the development of which has provided a parallel activity of the company, has gained similar support, and is recommended to young and old alike by the majority of the Dental Profession.

The Chas. H. Phillips Chemical Company is resolved rigidly to maintain those high standards which have built up through the years a reputation of which they are justly proud.

'MILK OF MAGNESIA' *(Regd.)*

The ideal antacid sedative for acute and chronic dyspepsia.
'Milk of Magnesia' is invaluable for securing rapid control of nausea and biliousness. It possesses mild laxative properties which ensure elimination of toxic degradation products.

'PHILLIPS' DENTAL MAGNESIA' *(Regd.)*

Used daily as a mouthwash, 'Milk of Magnesia' affords invaluable protection against caries and erosion by combating the destructive influence of the acid-producing bacilli.
Phillips' Dental Magnesia is the only tooth paste containing 'Milk of Magnesia.'

'MILK OF MAGNESIA' TABLETS

A highly convenient and readily accepted method of securing effective alkalization in those instances where treatment must be maintained at frequent intervals throughout the day.

'MIL-PAR' *(Regd.)*

This antacid lubricant—a skilfully prepared combination of liquid paraffin and 'Milk of Magnesia'—is indicated in chronic constipation and acid indigestion due to disorder of the alimentary tract.

1, WARPLE WAY, LONDON, W.3

Virol

A GREAT BUILDING-UP FOOD FOR CHILDREN AND INVALIDS

VIROL is a concentrated food of high nutritional value, and provides just those factors most likely to be needed to complete the diet.

THE INGREDIENTS of Virol are : malt extract, refined beef fat, maltose, sugar, malto—dextrins, glucose, fructose, egg, orange juice, salt, flavourings, phosphoric acid, calcium phosphate, iron phosphate, sodium iodide, and added vitamins.

VIROL CONTAINS per ounce :—Vitamin A, 500 *i.u., Vitamin D,* 1,000 *i.u., Vitamin* B_1 *(Aneurin),* 0.2 *mg., Nicotinic Acid,* 3.0 *mg., Iron,* 8 *mg., Iodine,* 75 *Micro-g., together with unstandardised amounts of other essential nutrients.*

The addition of Virol to ordinary cow's milk converts it into a completely balanced food for infant-feeding except for Vitamin C, which is readily obtained from orange juice. Virol is also an invaluable supplementary food for growing children.

During illness and convalescence when it is necessary to maintain the patient's strength without undue strain on the digestion, VIROL—because it is so palatable and easily absorbed—has proved to be a most nutritious restorative.

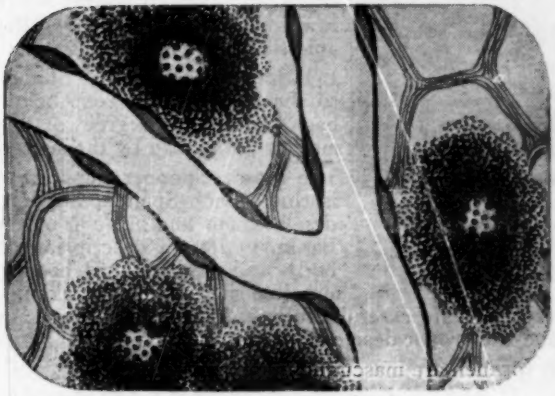
Virol completes the diet

VIROL LIMITED, LONDON, W.5

HEPARIN-BOOTS

(INJECTION OF HEPARIN B.P.)

the natural anticoagulant



HEPARIN *is the granular substance present in the mast cells in the walls of the vascular and reticulo-endothelial systems.*

Heparin is a powerful, non-toxic anticoagulant without cumulative effects, which can be safely administered in large doses. It is the only safe anticoagulant for use outside hospital practice, and has been used extensively for the prophylaxis and treatment of thrombosis.

Injection of Heparin-Boots is a pyrogen-free sterile preparation derived from high purity HEPARIN of not less than 100 units per mgm. Available in 5 ml. rubber-capped vials (1,000 and 5,000 I.U. per ml.).

Literature and further information is available on request from the Medical Department.

BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND

5-22A

A SPENCER SUPPORT

in Post-Operative Cases

Spencer Abdominal Supporting Belt designed especially for this woman. Non-elastic, Instantly adjustable. Will not yield or slip under strain. The pull of supporting abdomen is placed on the pelvis, not on the spine at or above the lumbar region. Note the Spencer Breast Support also designed especially for this woman.

to improve muscle tonus

to promote better body mechanics

Where support therapy is indicated following operation, a Spencer Support, *individually designed* for the one patient who is to wear it, provides many important benefits.

For example, a Spencer provides compensation for weakened abdominal muscles without restricting natural muscle activity. Thus nature is aided in restoring tonus.

A Spencer induces spontaneous posture improvement by the correlated action of support to lower abdomen and back. Thus an unfavourable tilt of pelvis is modified.

In a Spencer Abdominal Support, the support to the abdomen is from below, upward and backward. The degree of support provided may be prescribed by the surgeon.

The reason Spencer Supports are so effective is this :- Each Spencer Support is *individually designed, cut and made* at our Manufactory in Banbury *after* a description of the patient's body and posture has been recorded - and detailed measurements taken.

The doctor's instructions are carefully followed. This assures the doctor that each patient will receive the proper design to aid his treatment.

Spencer Supports for men are masculine in appearance.

For further information write to :

SPENCER (BANBURY) LTD.

Consultant Manufacturers of

Surgical and Orthopaedic Supports

SPENCER HOUSE · BANBURY · OXFORDSHIRE

Spencer copyright designs are original and distinctive and for more than 20 years have been recognised by the Medical Profession as a symbol of effective control for abdomen, back and breasts.

BEWARE OF IMITATIONS. Spencer (Banbury) Ltd. regret the necessity of issuing warning to beware of copies and imitations. Look for the SPENCER LABEL stitched in the Spencer Support and ensure that it is a genuine Spencer Support and not a so-called copy.

Trained Fitters available throughout the Kingdom

Copyright: Reproduction in whole or in part is prohibited except with the written permission of S (B) Ltd

S.B.1/60

ST. BARTHOLOMEW'S

HOSPITAL JOURNAL

Vol. LIV FEBRUARY, 1950. No. 2

WOMEN

It is not that one mistrusts women as a sex. It might be argued that they have their uses—in fact it is not profitable to wonder where one would be without them. The male medical student is no misogynist, but to have the ladies entering into competition for the earning of his very wage, with which he will have to support one of their sisters, is a cause for some anxiety. The male mistrust is rooted in the fact that women work—many a sin may be forgiven them but this. There is little more galling to the masculine breast than to sit in the midst of a host of affirmatively nodding female heads during the discussion of unintelligible medicine.

It is this ability to work, this perpetual keenness, that gives rise to the most concern. It is a fact that entry of women into academic pursuits has the effect of at once raising the standard of examination. Perhaps in some fields of intellectual activity this is of value. A doctor, however, is in a position where academic distinction takes second place to human knowledge and force of character. Many of medicine's greatest men have had trouble with their examiners—Ross of malaria fame being one such instance. This increase in difficulty of becoming qualified will debar men who, from greater natural aptitude for less scholarly pursuits, cannot attain the new standard, but who make often the better doctors than their more intellectually blessed brothers. Or sisters.

There is a matter more serious than any of these. If the future celebrity once had difficulty in completing his medical education, he now finds equal obstacles in the way of his beginning. It is laid down by London University that the Hospital will accept among its students 15 per cent. women. In October, 1948, 41 women (clinical and preclinical) were admitted to Bart.'s with 88 men: in October, 1949, 27 women with 88 men—rather under a half and a third respectively of the intake, therefore, being women. The ability of a Hospital to attract good calibre recruits to its ranks is often a measure of its student sporting prowess. To what an extent this ability is undermined can be readily imagined from the figures quoted.

There would be a greater case for the inclusion of so great a percentage of women were it known that, barring examination mishaps, all would complete their training and become practising doctors. The number that fall by the matrimonial wayside is not known, but of one, albeit exceptional, group, four of the five ladies are married or engaged. Should they complete their training, four of these five will be at once removed from practice and confined to tyrannising over their husbands' and childrens' ailments. Where are the men who could have filled their places? There is a dearth of qualified medical men in the British Isles. Thus do we attempt to fill the void.

The thin feminine end of a wedge has now been thrust into the hierarchy of the Hospital staff—the day of the housewoman has come. How much longer will the professorial chairs be occupied by men?

Let it not be thought that the entry of the ladies into medicine is one of unrelieved gloom—the discussion of nylon prices during lectures has its educational value. No case though is yet on record of an offer to darn socks. Attention, however, is continually distracted by visions of the French women at the guillotine, conjured up by the eternal clicking of knitting needles at Outpatients.

SWELLINGS OF THE SCROTUM

By C. V. BRAIMBRIDGE, C.B.E., M.V.O.

SCROTAL swellings are among the most common forms of pathological conditions met with among the native population of East Africa and the newly-arrived medical practitioner is apt to be considerably shaken by the remarkable phenomena which may be exhibited in this portion of the African's anatomy.

Like all Gaul, the main causes of these swellings may be divided into three parts, vie., elephantiasis, hydrocele and hernia. The really large swellings are practically always due to one of these three conditions.

Elephantiasis is probably the most spectacular of them and I shall never forget an occasion in my earlier days when an elderly African walked into the dispensary with his scrotum supported in front of him on a miniature stretcher carried by two small boys. This may sound an exaggeration but, according to Manson-Bahr, tumours of 40 or 50 lbs. are by no means uncommon and the largest on record is 224 lbs.

The condition is produced by certain nematode worms or filariæ, the adults of which live in the lymphatics, connective tissues or mesentery and produce live embryos or microfilaræ; these find their way into the blood stream where they live for a considerable time without further development. The adult filariæ living in the lymphatic vessels and glands draining the scrotum produce fibrotic changes which cause lymph stasis. This alone is not sufficient to lead to elephantiasis but the damage thus produced in the intima of the vessels so prepares the way that a non-suppurative secondary infection obtains a foothold. Further occlusion then takes place.

The tumour itself consists of two portions; first, a dense rind of hypertrophied skin thicker in the most dependent part; second, an internal mass of dropsical tissue resembling blubber. The testes, cords and penis are embedded in this mass and in the case of the larger tumours the penis is entirely hidden, only a small crater indicating its site. The blood vessels are of considerable size.

The only treatment of any value is operative removal. Various high-class techniques are described in the text-books but my own experience is that the job is best done by the light of nature. The most important point is to preserve any portion of skin which is not too heavily infiltrated, if possible finding an area which may be used at least partially to cover the penis. The blubbery mass is easily freed by gauze dissection, exposing numerous large vessels which must be carefully tied—with cotton for preference. There is no difficulty in separating the cord and testes but to fashion a new scrotum is not easy; by undermining the skin in the upper inner aspects of the thigh, however, much help may be gained. Skin grafting may be necessary, especially to cover the penis, but it is surprising how well the grafts take on what might be expected to be unhealthy tissue.

The gratitude of the patient after a successful operation of this nature may well be imagined and some of the gifts bestowed on the writer by way of thanks have at times been quite embarrassing. One particularly truculent goat took a lot of laughing off.

The type of **hydrocele** commonly seen in the African is very different from that one used to see in the Out-Patient Department at Bart.'s, where one of the functions of the dresser on duty used to be to tap a series of scrotums (or should it be scrota?) in old men with thin-walled sacs containing a reasonably small amount of fluid. Here it is no uncommon occurrence to see a patient with a scrotum the size of a football the thickened layers of which have a very similar consistency to its leather casing.

As regards etiology, filariasis is again often given the credit for its causation, but the writer has seen many cases in areas where the filaria is rarely seen and the condition may be fairly regarded (as elsewhere) as idiopathic in origin. As a rule many attempts have been made by the patient, his friends or the local witch doctor to cure the condition by application of hot cow-dung, counter-irritation with red-hot irons, scarification with rusty nails or other heathen methods. It is not surprising, therefore, that the coverings of the sac sometimes become almost cartilaginous in consistency and that treatment by tapping will get you nowhere.

The simplest and also the most satisfactory operation is incision and eversion of the sac. In his early days the writer made a habit of excising the sac within a short

radius of the testis. It seemed not to matter however how great care was taken to attain hæmostasis either by multiple ligature or by continuous suture: despite drainage enormous hæmatomata used constantly to occur.

The skin and the outer layers of the sac should be incised. The inner layer should then be freed for a short distance with a dissector and the remainder of the clearance made by sweeping the finger firmly round the cystic tumour. A small incision is made through an avascular area and the fluid evacuated, following which the sac is eventrated. The incision is enlarged sufficiently to enable the sac to be turned inside out and a through-and-through stitch is placed through the mesorchium to prevent spontaneous reduction. The mass is returned into the scrotum and the skin closed. An important point to remember is to support the scrotum and this is best done by suturing it to the anterior abdominal wall. The formation of a hæmatoma rarely follows and it is surprising how soon the thickened sac wall shrinks up and the testicles return to a size which may be regarded as reasonable by any self-respecting male.

Hernia presents no different problems in East Africa to those encountered in more temperate climes other than that of size. Sometimes most enormous specimens are seen and only recently the writer was presented with one which, to pursue the sporting analogy, assumed the size of two Rugby footballs put together and contained practically the whole of the peritoneal contents with the exception of the liver, the spleen and the stomach. As could be expected, the omentum also was excessively large and fatty. I think this particular hernia was the largest I have ever seen and operating on a case of this sort requires considerable ingenuity and cannot be dealt with by any standard method.

Like most other surgeons I have tried out most of the techniques which have been described from time to time for the cure of inguinal hernia and again like other surgeons have found that I have worshipped at the shrine of false gods. Since 1946 my preference has been for various slight modifications of the procedure devised by Jacobson of Petersburg, Virginia, and I have found great satisfaction in dealing with all sizes and conditions of hernia by this intraperitoneal route.

Its advantages are several. Two birds may often be killed with one stone and the appendix or other pathological abdominal viscus removed at the same operation. The size of the hernial orifice may be adequately estimated and much of the time formerly spent in dissecting the sac from the cord (very considerable in large chronic hernias such as described above!) is eliminated. Finally it gives one a most comfortable feeling to insert a finger into the peritoneal cavity after the herniorrhaphy has been carried out and satisfy oneself that a firm barrier has been erected against the insidious attacks of recurrent intra-abdominal pressure. For the actual repair when such is necessary I have for the last year been employing a nylon darn. Nylon is more easy to manipulate than stainless steel wire and seems to give just as good results. I also make all my patients do a month's course of "hernia exercises" beginning fourteen days after the operation; I *think* it helps though I don't know.

Swelling of the scrotum in East Africa can thus be seen to provide a variety of interesting and unexpected problems and any aspiring surgeon who feels disposed to sojourn in these outposts of Empire will certainly find plenty to amuse him in this and many other fields of labour.

REFERENCES:

Manson-Bahr, P. (1941). Tropical Diseases, 11th Edition, 772.

Jacobson, P. (1946). Inguinal Herniorrhaphy from the Intra-abdominal Perspective. Am. J. Surg., Vol. LXXI, 797.

RETIREMENT OF PROFESSOR HOPWOOD

The President and Council of the Medical College held a reception in the Great Hall on December 22 in honour of Professor Hopwood, on the occasion of his retirement. One hundred and fifty guests were present.

We would like to take this opportunity of welcoming his successor, Professor J. Rotbat, who comes to us from Liverpool, and is distinguished for his work in Nuclear Physics.

FAT ABSORPTION IN MAN

By PROFESSOR A. C. FRAZER
(Department of Pharmacology, University of Birmingham).

ONE HUNDRED years ago Claude Bernard[1] published a series of pioneer observations on intestinal absorption of fat. He demonstrated the fine emulsification of fat in the intestinal lumen, the dependence of this emulsification upon the presence of bile and pancreatic juice, and the occurrence of milky lacteals and lymphatics and the systemic hyperlipæmia at the height of fat absorption. During the last part of the 19th century Immanuel Munk did much experimental work in this field; one of his most famous studies being that made on a girl with a lymphatic fistula from which he recovered some 60% of ingested fat.[2] During the second half of the 19th century, it was generally thought that fat was absorbed as a fine oil-in-water emulsion. However, at the beginning of the 20th century the importance of lipolysis as a necessary step in fat absorption gained increasing support, mainly due to the advocacy of Pflüger.[3] In 1929, Sinclair[4] introduced the view that phosphorylation was an important factor in fat absorption. The situation was eventually summarised in 1936 by Verzar and McDougall,[5] who further supported the conception that fat absorption was dependent on complete hydrolysis of glycerides. The object of this paper is to present some of the results of investigations on fat absorption which have been carried out with a number of colleagues in London and Birmingham during the last 15 years. These studies have been made in experimental animals, in human subjects, and also in some cases *in vitro*, since basic data were often required upon which biological methods could be based. However, this paper is mainly concerned with the methods we have developed, and the interpretation of studies we have made, in normal and abnormal human subjects.

DEVELOPMENT OF METHODS

(a) Estimation of the amount of fat absorbed.

Too frequently in the past assessment of fat absorption has been made upon the analysis of a single sample of fæces. A number of workers have pointed out the unsatisfactory nature of such investigations and it is now generally agreed[6, 7] that fat absorption can only be satisfactorily assessed by the use of a balance technique. The longer the period of this balance study, the more accurate the estimation is likely to be. We have now discarded these periodic balance methods in favour of daily determination of total fatty acid intake and output. This method was based on that described by van de Kamer, Huinink and Weyers (1949).* The fatty acid was estimated in each 24-hour sample of fæces and a three-day running mean of the fatty acid rejected was taken as the basis for calculating the difference between fatty acid intake and rejection. The use of a three-day running mean overcomes sampling difficulties in individual 24-hour specimens. Changes in the amount of fat absorbed are readily followed, which makes it particularly valuable as a research method and also in clinical practice as a means of assessing response to treatment. Samples of fatty acids are readily obtained for more detailed study, if required.

(b) Determination of tolerance to quantitative and qualitative loading of dietary fat.

The effect of increasing the fat in the daily diet from 50 g. to 100 g., or even 150 g. in suitable cases, was determined. The effect of changes in the type of fat was also studied.

(c) Characterisation of fæcal fatty acids.

The fatty acids in the fæces were separated and their iodine value, melting point, and mean molecular weights determined. With adequate samples separation and more detailed study of the constituent fatty acids was possible. Volatile short chain fatty acids, such as acetic acid, were also estimated. Special arrangements for the collection of fæces were necessary for these studies.

(d) Determination of general absorptive activity of the intestine.

The ability of the intestine to absorb other substances than fats was investigated. An intraduodenal drip technique was developed for the study of glucose absorption. 10% glucose solution was passed into the small intestine by tube in small quantities at minute intervals for one hour; the stomach

* Based on a lecture given to the Abernethian Society on April 28, 1949.

was then drained and the tube withdrawn. Blood samples were taken at 5—10 minute intervals throughout, from analyses of which a blood sugar curve was constructed.

(e) Investigation of intraluminar conditions.

These were studied by intestinal intubation. A Miller Abbot intestinal tube was passed into the small intestine. Its position was checked radiographically. The bag was inflated and samples of intestinal contents were withdrawn. These were examined for pH by glass electrode and the presence of bile constituents and various enzymes determined. The enzymes normally studied included trypsin, amylase, lipase, phosphatase and lysozyme, which were investigated by standard methods. We have also searched for lecithinases and cholesterol esterases in many cases. The material obtained by intestinal intubation was also examined for the presence of bacteria. The level of blood sulphathiazole after a test dose of succinyl sulphathiazole was also determined.

(f) The study of intraluminar changes affecting ingested fat.

After the resting samples were collected the subject took 30 g. of olive oil by mouth. Samples were removed at regular intervals for the next five hours. These samples were examined for pH, enzymes and other materials, as described above. In addition, the fatty material was analysed and the quantity of fatty acids and lower glycerides determined. The degree of emulsification was estimated by examination under dark-ground illumination. The characteristics of the stabilising interfacial film were studied by investigating the protein flocculation pattern[9] and the effect of enzymes such as lecithinase on the stability of the particle.[10]

(g) The investigation of sequelæ to fat absorption.

(i) *Post-absorptive systemic hyperlipæmia.*

Normally after ingestion of a standard fat-containing meal there was an increase in the particulate fat in the systemic blood.[11] This was measured by counting the number of particles visible under dark-ground illumination.[12] A standard meal containing 30 g. of fat was administered, particle counts were made, and a chylomicrograph constructed. The systemic hyperlipæmia was also followed by micro-estimation of blood fat, using a method adapted from Schmidt Nielsen (1946).[13] For general purposes the chylomicrograph was quite satisfactory and much quicker than the analytical method.

(ii) *Gastric secretion and motility.*

It is well known that the secretion of acid by the stomach and the rate of gastric emptying time are both decreased by the ingestion of fat. The effect of a standard fatty meal on these two aspects of gastric function was determined by standard methods.

(iii) *Mucous secretion*

In experimental animals it was shown that fatty acids caused a marked increase of mucus secretion in the small intestine. It was also shown in man that fatty acids caused the appearance of a segmented radiographic pattern indistinguishable from the so-called "deficiency pattern."[14] It was also shown that this segmental pattern was induced by the presence of mucus, which flocculated the barium sulphate suspension. In these experiments radiographic appearances of the small intestine after the administration of a suspension of barium sulphate in water by mouth or by intraduodenal tube were noted.

RESULTS

In normal human subjects.

The amount of fat absorbed in a normal human subject was more than 95% of the quantity ingested. The increase of dietary fat from 50 g. to 100 g., or even to 150 g., made no significant difference to the percentage absorbed, which always exceeded 95%. Alteration of the type of fat had little effect on absorption, unless special non-dietary fats, such as tristearin, were administered. There may be little obvious relationship between the fat found in normal fæces and the dietary fat. If the fæcal fatty material found was derived from the diet the normal percentage absorption exceeded 95%; if the material was derived from other than dietary sources, the percentage absorption was nearer to 100%. Normal fæces usually contained less than 1 g. of volatile fatty acids in a 24-hour sample, but the quantity varied slightly from time to time.

Intraluminar conditions in the normal small intestine were reasonably constant. The reaction was usually acid in the upper part of the small intestine. Occasionally the pH was in the region of 7.0, but this soon changed to the acid side after feeding fat. The average pH in the small intestine was in the region of 6.5. The presence of tryptic, amylolytic and lipolytic activity was readily demonstrated in normal subjects. The resting sample of intestinal contents showed

a relatively low lipolytic activity. This was enhanced by the addition of bile salts, indicating that the apparent increase in lipolytic activity in samples taken after fat feeding was probably due to secretion of bile salts rather than lipase. Lysozyme and phosphatase were demonstrated. There was a marked increase of phosphatase following the administration of fat. Lecithinases and cholesterol esterases were not found in normal intestinal contents, contrary to other observations.[15] Intestinal contents withdrawn from the upper part of the small intestine sometimes contained bacteria — some thousands, or occasionally tens of thousands per ml. The administration of succinyl sulphathiazole to normal subjects in doses up to 6 g. did not give rise to blood sulphathiazole levels greater than 1 mg. per 100 ml. of blood.

After feeding fat by mouth, samples from the intestine were invariably acid and contained fatty material. The amount of fatty acid present was usually small—if there was more than 1 g. of oil the percentage hydrolysis was usually less than 10%—with smaller quantities of fat the percentage hydrolysis was sometimes higher. The fat was finely dispersed as an oil-in-water emulsion with an average particle size of less than 0.5μ The analysis of the fatty material showed the presence of fatty acids, lower glycerides and bile salts. The particles behaved as though negatively charged and lecithin was not apparently essential for their stability.

Using the intraduodenal drip technique, the blood sugar rapidly increased for the first 30 min., after which the rate of increase declined; when the glucose injection was stopped and the stomach emptied, the blood sugar returned rapidly to the normal resting level.

The administration of a standard meal containing 30 g. of fat resulted in systemic hyperlipæmia. The maximum increase in particles was reached in 2½—3½ hours and the blood fat returned to normal levels in 5 hours. With 30 g. of fat no marked delay in gastric emptying was evident, but if 60 g. of fat were ingested delay occurred, the peak of the chylomicrograph being 6 hours or later. Small quantities of fat had little effect on gastric secretion. If larger amounts were ingested, however, there was inhibition.

Barium sulphate suspension in water was introduced by intra-duodenal tube. Radiographs showed the characteristic feathery pattern of the small intestine and visualisation of the mucosal folds. Fatty acids added to the barium sulphate suspension caused clumping of the barium and a characteristic segmental pattern. The change from the feathery pattern to the segmental pattern occurred in about ten minutes and was watched by screening. The mucosal folds were no longer visible. Fatty acids did not flocculate barium sulphate *in vitro*, but the addition of mucus to the barium sulphate suspension resulted in immediate and complete flocculation. Fatty acids were shown to be mucigenic stimuli. Moderate amounts of triglyceride did not give rise to the segmental pattern unless the fat was hydrolysed before administration. Large quantities of fat taken previous to the radiograph sometimes caused changes from the normal feathery pattern towards the segmental type.

In abnormal human subjects

A large number of cases of defective fat absorption have been investigated, but refererence will only be made here to the results obtained in the detailed study of 20 cases of non-tropical sprue, 10 of obstructive jaundice and 2 of pancreatic atrophy, subsequently proved at autopsy.

If the amount of fat absorbed was less than 90% of the quantity ingested, fat absorption was considered to be defective. In most cases of sprue in remission fat absorption was about 70%, and in some cases it rose almost to 90%. When exacerbation occurred, the fat absorption defect became more pronounced, and percentage absorption fell. In cases of pancreatic insufficiency and obstructive jaundice the fat absorption defect was more severe. Cases of pancreatic insufficiency may sometimes resemble the sprue syndrome closely, in which case the characteristic features of the simple pancreatic insufficiency described here may not be observed.

If the dietary fat was increased from the standard 50 g. to 100 g., the majority of cases of non-tropical sprue showed a proportionate increase in absorption; thus, if the case absorbed 35 out of 50 g. fat, the amount absorbed on a 100 g. of fat was 70 g. In bad cases of sprue, loading of the dietary fat did not necessarily increase the quantity absorbed. In pancreatic insufficiency and obstructive jaundice the addition of further fat to the diet resulted in a corresponding increase of fæcal fat. In cases of sprue in remission, fats containing large amounts of long-chain saturated fatty acids were not

well tolerated. More unsaturated and short-chain fats were more easily assimilated. The fatty material found in the fæces in all these conditions was derived from the diet. If the dietary fat was drastically reduced, the fæcal fat immediately fell correspondingly. The fæcal fat in sprue consisted of long-chain saturated fatty acids, with a low iodine value and high melting point; sheaves of fatty acid crystals were commonly observed in the fæces. In sprue in exacerbation and in obstructive jaundice and pancreatic insufficiency a wider range of fatty acids were observed. Subjects with no demonstrable pancreatic enzymes and no active pancreatic alveoli at autopsy, showed normal (85%) hydrolysis of fæcal fat. Volatile fatty acids were greatly increased in some cases of sprue, sometimes more than 10 g. of acetic acid in a 24 hour sample.

Intubation studies showed no significant difference in the pH of the intestinal contents between these abnormal subjects and normal. In the sprue syndrome tryptic and amylolytic activity were usually normal. Lipolytic activity often appeared to be slightly depressed and the addition of bile enhanced activity in all samples. Phosphatase showed a dramatic increase after fat feeding as in normal subjects. Lysozyme was sometimes defective. Bacteria were present in large numbers in the upper intestine, especially in achlorhydric cases. Succinyl sulphathiazole by mouth gave rise to blood levels in some cases greater than 10 mg. sulphathiazole/100 ml. blood. The fat appeared to be adequately and normally emulsified. In obstructive jaundice phosphatase was absent, but the other enzymes were present. Lipolysis was feeble, due to lack of bile salts. The fat in the intestinal lumen was not emulsified; agitation of samples after the addition of bile salts resulted in fine emulsification. In pancreatic atrophy there were no pancreatic enzymes demonstrable in the intubation samples. The fat in the lumen was not emulsified, but the addition of lipase and subsequent incubation and agitation caused fine emulsification. In bad cases of the sprue syndrome the absorption of 30 g. of fatty material usually gave rise to no demonstrable post-absorptive hyerlipæmia in the systemic blood. In milder cases the lipæmia was also absent or greatly reduced. The absence of this systemic hyperlipæmia was confirmed by micro-estimation of blood fat. In biliary obstruction and pancreatic atrophy no post-absorptive systemic hyperlipæmia was observed.

In the sprue syndrome gastric hypochlorhydria was usual and there was marked delay in gastric emptying. In severe cases gastric delay became more pronounced and complete achlorhydria might occur. In biliary obstruction and pancreatic atrophy, on the other hand, gastric secretion and motility were usually normal.

Radiographic studies of the small intestine in cases of the sprue syndrome showed the so-called "deficiency pattern,"[16] due to clumping of the barium. Cases of obstructive jaundice or pancreatic atrophy showed the normal feathery pattern.

DISCUSSION

Normal fat absorption

The elucidation of problems in human physiology demands the study of both normal and abnormal subjects, since disease often provides the only opportunity for an adequate experimental approach. In normal circumstances nearly all the fat ingested is absorbed. Increasing quantities of fat, up to 150 g. or more, are well tolerated. Most normal dietary fats are well absorbed. 95—100% of administered fatty acids are absorbed by experimental animals, provided that the fatty acids are liquid at 37° C., or mixed with other oils. Long-chain saturated fatty acids, such as stearic acid, are poorly absorbed when fed alone. Thus, dietary triglycerides are almost completely and rapidly absorbed over a wide quantitative and qualitative range.

Intubation studies show that triglyceride fats are finely emulsified in the intestinal lumen in an acid medium. It has been shown by *in vitro* experiments that the only emulsifying system which works under these conditions is the triple combination of fatty acid, bile salts and monoglycerides.[17] It has also been shown that the fatty acids and monoglycerides are formed from the triglycerides during pancreatic lipolysis.[18] In normal subjects the chemical analysis of the fatty material shows the presence of fatty acids and lower glycerides, while the failure of intra-intestinal emulsification in cases of biliary obstruction and pancreatic insufficiency and efficacy of appropriate replacement support the conception that the essential emulsifying system consists of the products of lipolysis and bile salts.

The intubation studies also indicate that hydrolysis of long-chain fats may be restricted in the upper part of the small intestine. The quantity of fatty acid observed in the intestinal lumen at any time during absorption is small. For molecular absorption of fatty acid to occur, the fatty acid must be removed from the oil into the water phase. This is difficult under the conditions prevailing in the intestine. Fatty acid can be dispersed in water as a complex with bile salts, the molecular proportions being 5 of bile salts and 1 of fatty acid. The hydrotropic action of bile salts may work under artificial conditions, but we have not succeeded in demonstrating effective removal of fatty acid into the water phase by the addition of bile salts in normal biological amounts. In any case, the amount of bile salts available in the intestine is less than one-third of the amount required for the absorption of the normal quantity of fat in the form of fatty acid/bile salt complexes. So long as stronger acids, such as hydrochloric acid, are present in the intestine relatively little base will be available for the formation of soaps. Butyric acid is water-soluble and the hydrolysis of tributyrin is not consequently restricted by these factors. Tributyrin is absorbed as butyric acid and does not occur in the chyle or the fat depots. Tributyrin absorption resembles the absorption of fatty acid rather than the absorption of glycerides.[19] The absorption of fatty acids tends to be incomplete, especially if long-chain saturated fatty acids are present. Under normal circumstances, however, complete absorption of dietary glycerides, which contain long-chain saturated fatty acids, occurs.

If fatty acids are administered to animals or to man they give rise to no postabsorptive systemic hyperlipæmia. They are not deposited in the fat depots, but can be traced to the liver. Feeding an equivalent amount of triglyceride causes milky lacteals, fat-laden chyle and a systemic post-absorptive hyperlipæmia[20]. The addition of lipase to ingested fat in human subjects causes a suppression of the postabsorptive hyperlipæmia[21]. The occurrence of this post-absorptive systemic hyperlipæmia is indicative of particulate absorption. The passage of fat particles from the intestinal cell via the lymphatics into the blood stream is universally agreed. There is evidence in animals that particulate fat can pass from the intestinal lumen into the intestinal cell;[17] this, however, has not yet been finally proved in man. When fatty acids are fed there is a marked inhibition of gastric motility and gastric secretion, so that absorption is spread over a longer period of time, but with suitable fatty acids absorption is reasonably complete eventually. If glycerides are fed, however, containing an equivalent amount of fatty acid, there is no marked inhibition of gastric motility or gastric secretion and absorption is completed more quickly. Fatty acids can be shown to cause a marked increase in mucous secretion in the small intestine and in human subjects they can cause the radiographic segmentation pattern which has also been associated with mucous secretion. Triglycerides, on the other hand, do not stimulate mucous secretion, nor does the unhydrolysed fat cause radiographic changes in human subjects.

It is suggested that triglycerides are only partially hydrolysed and then finely emulsified in the intestine. Absorption may be in particulate form, in which case the absorbed material passes by the lymphatic pathway to the systemic blood, giving rise to the characteristic hyperlipæmia. Alternatively, if the fatty acid can be molecularly dispersed in the aqueous phase, absorption may occur in this form, and the absorbed material passes, like other water-soluble substances, mainly in the portal blood to the liver.[22] With most dietary fats, absorption is usually in particulate form. If there is interference with particulate absorption, more extensive fatty acid absorption can occur. This is made possible by alterations in intraluminar conditions, particularly the inhibition of gastric acid and decrease in motility. Glyceride absorption is very complete and rapid and is not affected by the presence of acid in the intestinal lumen. Fatty acid absorption, on the other hand, is slower, not so complete, and certain long-chain saturated fatty acids are not well absorbed. The absorption of all fatty acids may be affected by the presence of stronger acids in the intestinal lumen. Fatty acid absorption is associated with a decrease of gastric motility and secretion and an increase of mucous secretion.

Abnormal fat absorption

The first obvious cause of defective absorption is faulty emulsification in the intestinal lumen, which is observed in

obstructive jaundice and deficiency of pancreatic enzymes. In such cases particulate absorption of glycerides cannot occur, as there is no emulsification. Furthermore, lipolysis is also slow in the upper intestine, due to lack of lipase or bile salts, so that there is also interference with fatty acid absorption. Consequently, the fat absorption defect is severe and the sequelæ associated with both particulate and fatty acid absorption do not occur.

In the sprue syndrome, on the other hand, intraluminar emulsification appears to be adequate. There is, however, interference with particulate absorption, possibly due to mucus, and lipolysis continues. Fat is absorbed in this condition essentially as fatty acid. For this reason it is not so complete —saturated long-chain fatty acids are not assimilated. The sequelæ associated with fatty acid absorption—inhibition of gastric secretion and motility and increased mucous secretion, giving the radiographic segmental pattern—are evident. In mild cases the restriction on absorption is only connected with the presence of long-chain saturated fatty acids, so absorption is proportionate to the amount ingested and the long-chain saturated fatty acid content.

In more severe cases of the sprue syndrome a further factor is concerned—carbohydrate fermentation. This arises due to faulty carbohydrate digestion and absorption—hence it can also arise secondarily in pancreatic insufficiency. The acetic acid formed interferes with the absorption of longer chain fatty acids and may also give rise to diarrhœa. Carbohydrate fermentation may also be associated with an upgrowth of intestinal bacteria into the upper part of the small intestine. It is possible that these bacteria may compete with the host for common essential nutrients and this gives rise to certain vitamin deficiences.[23] Thus the sprue syndrome may consist of three parts: a "fatty acid syndrome," due to a change from particulate to fatty acid absorption, a "fermentation syndrome," which results from inadequate digestion and absorption of food materials, which are then acted upon by intestinal bacteria, and a "bacterial competition syndrome," consisting mainly of deficiencies caused by successful competition for nutrients by intestinal bacteria. The severe case of sprue exhibits signs and symptoms from each group—the milder case, however, may only show a few signs and symptoms from one group. A great deal more investigation is still required before we can understand all the problems which are raised in a single case of the sprue syndrome.

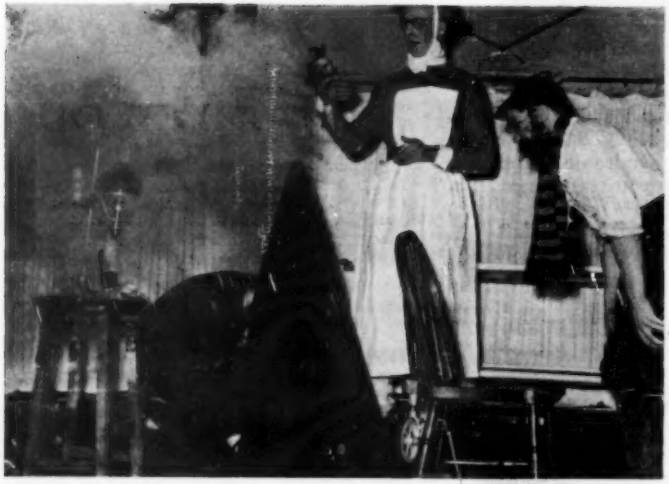
REFERENCES

1 Bernard, C. (1856). Baillière, Paris.
2 Munk, I. and Rosenstein, A. (1891). Virchow's Arch., *123*, 230, 484.
3 Pflüger's Archiv. (1901), *86*, 19, *88*, 431.
4 Sinclair, R.G. (1936), J. biol. Chem., *115*, 211.
5 Verzar, F. and McDougall, E. J. (1936), Absorption from the Intestine. Longmans Green, London.
6 Cooke, W. T., Elkes, J. J., Frazer, A. C., Parkes, J., Peeney, A. L. P., Sammons, H. G. and Thomas, G. (1946), Quart. J. Med., *15*, 141.
7 Black, D. A. K., Fourman, P. and Trinder, P. (1946), Brit. Med. J., ii, 418.
8 Kamer, J. H. van de, Huinink ten Bokkel, Weyers, H. A. (1949), J. biol. Chem., *177*, 347.
9 Elkes, J., Frazer, A. C., Schulman, J. H. and Stewart, H. C. (1945), Proc. Roy. Soc. A., *184*, 102.
10 Frazer, A. C. (1949), Surface Chemistry. Butterworths, London, 241.
11 Frazer, A. C. and Stewart, H. C. (1937), J. Physiol., *90*, 18.
12 Frazer, A. C. and Stewart, H. C. (1939), J. Physiol., *95*, p.21, 23.
13 Schmidt Nielsen, K. (1946), Acta Physiol. Scand., *12*, 537.
14 Frazer, A. C., French, J. M. and Thompson, M. D. (1949), Brit. J. Radiol., *22*, 123.
15 Le Breton, E. and Pantaleon, J. (1947), Arch. Sci. Physiol., *1*, 63.
16 Golden, R. (1945), Radiologic examination of the small intestine. J. P. Lippincott & Co., Philadelphia.
17 Frazer, A. C., Schulman, J. H. and Stewart, H. C. (1944), J. Physiol., *103*, 306.
18 Frazer, A. C. and Sammons, H. G. (1945), Biochem. J., *39*, 122.
19 Frazer, A. C. (1948), Arch. Sci. Physiol., *2*, 15.
20 Frazer, A. C. (1943), J. Physiol., *102*, 306.
21 Frazer, A. C. (1943), J. Physiol., *102*, 329.
22 Frazer, A. C. (1946), Physiol. Rev., *26*, 103.
23 Frazer, A C. (1949), Brit. med. J., ii, 731, 769.

SPORTS EDITOR

P. D. Moyes has been elected Sports Editor in succession to J. D. W. Tomlinson.

THE CHRISTMAS SHOWS



Photos: H. Charles.

A MANUAL OF ANATOMY

ANON

1. BONES: OSTEOLOGY

(Latin: *logos*, I Study; *osses*, bones)

These fascinating organs form the backbone of the whole system and have a very interesting and varied development history.

There are three main types of bone: *long*, *irregular* and *flat*.

Long bones are often suprisingly short—hence their name. *Irregular bones* usually possess a highly symmetrical shape, whilst *flat bones* are rarely anything but curved. Thus it is easy to remember them by their terminology; but a very interesting mnemonic was invented recently by Professor Ostry-Gonham: *Long bones are short if irregular bones are not often curved but they are all somewhat flat.*

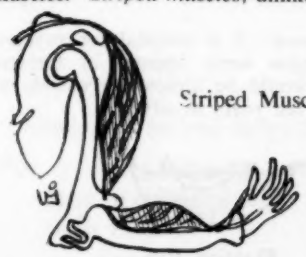
How easy it all seems now! For instance, the tibia, which is 11.3 inches long in short people is quite long in athletic subjects, particularly if they are tall, while "the second metacarpal of the left hand never varies in people of the same build." (*The Long and Short of It*, Q. Boyd). Now one can understand how logical the study of bones really is. Or is it?

2. MYOLOGY

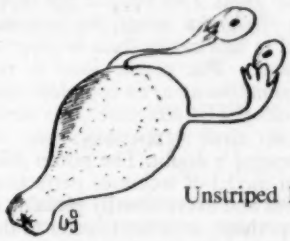
The study of muscles, or Myology as it has come to be known to the layman, is the study of the gross composition of the Human Figure. (How gross that figure often is!) Muscles form the meat extract of our bodies and are quite palpable and often pleasant to the feel. A graceful figure is the sum total of the multiple tonic efforts of every active muscle and one knows how really pleasant such a figure is to the feel. . . .

Now muscles are divisible, like bones, into several headings. There are all sorts of muscles, in fact, and these need not cause undue alarm.

Finally, there are *striped* and *unstriped* muscles. *Striped muscles*, unlike long bones (*q.v.*), are actually striped, and these do quite a considerable amount of work. *Involuntary muscles*, however, are lazy lumps of meat, and have to be stirred to action. These muscles are called into play on occasion, *e.g.* when something has to be passed, as in cards ("I pass").



Striped Muscle



Unstriped Muscle

Heart muscle, although striped, is involuntary, and that is where the logic of myology comes in.

3. EMBRYOLOGY

This tremendously important chapter should, by due rights, have opened the book. However, better late than never, as the old bridegroom said.

Now gentlemen, you will remember that in the beginning two cells connived to dedicate a new life: one cell from the active male, and another from a supine squaw in vigilant repose. The single produce proceeded to divide, redivide, and so forth, until a miniature replica of the adult form resulted. Eventually the growing parasite was ejected from the mother and developed outside the mother with great rapidity. (The most interesting developmental stage occurs at puberty: but embryology is limited to the intra-uterine phase of human existence.)

Little exciting happens before birth. The foetus (as the creature is called) goes on developing, acquiring a new set of organs here, or a pair of lungs there, and so on. As this process has been going on for thousands of years, why should modern anatomists bother with such an everyday occurrence, and spend so much precious time appraising the multitude of incidents which mark each latest stride in embryonic development? In certain respects the 17-year-old model is a far more wonderful product than the sex-starved brat of 17 weeks, and is certainly more helpful to the inexperienced medical student, groping after knowledge. . . .

4. JOINTS: ARTHROLOGY

Like osteology, the Study of Joints, or Arthrology, has a logical bent, and consequently presents certain discrepancies which are best dispensed with. There are numerous types of joint:—

a. synarthrodial
b. diarthrodial
c. Sunday

and (a) and (b) are subdivisible. But the nature of these joints goes beyond the scope of this book. *Synovial joints*, for instance (b), are bathed in lubricating fluid in order to assist movement. The piston joint is not technically a joint, owing to its complete non-bony, non-cartilaginous structure. It is never referred to in rival text-books, but its existence is beyond a doubt. The *piston joint* is a wonderful model of technical perfection, smooth, flawless and exceptionally pleasing in action. It is, perhaps, in order to refer to this joint as a thigh-arthrodial type of the diarthrodial variety.

The *Sunday joint* is ably dealt with in most competent text-books of cookery.

Piston Joint

5. NEUROLOGY

Neurology deals with the Study of Nerve Structure in all its intricate variations. The function of nerve bodies is so interesting that space does not permit of enlarging on the subject. However, living as we are in a world of neurotics, nervous wrecks and other psychological misfits, we must endeavour to probe into the annals of the unknown, and simultaneously take a leaf out of the text-books of physiology and psychology.

1. What is a *nervous wreck*?

The product of the 20th century is anything but perfect, and when he (or she) is unable to make ends meet, considerable flattery results from referring to such a person as a nervous wreck. The strains imposed by modern life are very acute, and strong, silent men are finding it increasingly difficult to live up to their reputation. In other words, a nervous wreck is the result of two trains of thought colliding along the same line of action.

Treatment: live alone and like it.

2. What is a *neurotic*?

Highly temperamental people: particularly continentals: are composed of most discordant neurological factors which continually run counter to one another. Instead of pursuing the same line of mental action, these factors bombard themselves so that the helpless creature is perpetually striving to follow an impossibly definite line of thought. Consequently they are miserable, introspective and strangely melancholic in outlook, and depress anyone they happen to meet. As lovers they inadvertently develop a splendidly suicidal atmosphere (Shakespeare's *Desdemona, Ophelia* and *Hamlet* studies) and end up the sooner the better.

Treatment: develop a communal instinct and work for others.

3. What is a "*highly-strung*" *individual*?

When the nervous system is overtaxed, the multifold axons become taut, and the individual feels mentally elated: hence a highly-strung sensation, eventually causing a feeling of false exaltation.

Treatment: let down the strings.

4. What is *nervous indigestion*?

This is a psychological complaint affording little hope of extra-medical cure. The cause and effect are so ridiculously elementary that only the "victim" can counter his phobia by readjusting his outlook on food.

Treatment: eat what you like, when you like—and be as sick as you like, where you like.

In conclusion: if a hospital for psychological illnesses were opened in Central London, it would be almost impossible to book a bed ten years in advance.

Floating Rib

6. SPLANCHNOLOGY

The study of organs, or Splanchnology, affords little of interest to the average intelligent man or woman in the street. Certain organs are of peculiar and entrancing interest, but as the intimate study of such organs embraces a highly successful profession on its own, we must stick to the lesser-known organs and leave the aforesaid profession to the pleasure-loving man and woman of the street (especially the latter).

All organs, with many exceptions, are capable of enlarging themselves to accomodate or be accomodated. There is one particular organ which is capable of enlarging itself several times a day, and that is the *stomach*.

Stomach

Another important organ is composed of spongy tissue and expands remarkably rapidly in the act of breathing—*wun-lung*, or the Chinese Organ. Of course, these are but a few of the very many (any offers?). There comes a time in the study of organs when logic comes into its own, so we will draw the line at this point

---

—and proceed with the study of that enormous by - product of Anatomy — PHYSIOLOGY.

WATCH FOR THIS NEXT MONTH

Erratum: Chapter 6, line 10; for *of* read *in*.

* * *

WANTED ! !

MORE BODIES FOR DISSECTION

(*living or dead*)

Applicants should apply in writing to the Medical College Anatomy Dept., stating age, qualifications and deformities.

A knowledge of Greek and Hebrew is not required, but applicants must have reached the School Certificate standard.

Special facilities will be granted for married couples.

ADMISSION FEE — FIFTEEN GUINEAS

A reduction of 3½% will be allowed for former medical students.

[ADVT.]

* * *

PRESS COMMENTS

Cunningham goes well with this book. I strongly advise it.—*B.N.J.*

An excellent little publication. The anatomy is quite good, especially the chapter on sweat—*The Scalpel.*

* * *

ABERNETHIAN SOCIETY

Meetings to be held before Easter are:—

Feb. 2. Dr. Geoffrey Bourne, on "The Place of Optimism in the Treatment of Heart Disease."

Feb. 9. Clinical Evening.

Feb. 23. Mr. G. Russell Vick, K.C., Chairman of the Bar Council, on "The Bar of England."

Mar. 2. Rt. Hon. Lord Moran, on "Conscription."

Meetings will be held at 5.30 p.m. in the Clinical Lecture Theatre.

WILLIAM GIFFORD, MAN-MIDWIFE

By WALTER RADCLIFFE

THE fame of William Smellie so far overshadows all eighteenth century obstetrics that the valuable contributions of his less known contemporaries tend to drift into undeserved oblivion. Much of this is due to the fact that Smellie was an outstanding teacher, perhaps the most successful the profession has ever known, and his great merit has been enhanced by the brilliance of so many of his pupils such as William Hunter, John Harvie, R. Wallace Johnson, Thomas Denman and the two great Dutch professors, John Roederer of Gottingen and Peter Camper of Franeker, all of whom became leading teachers and passed on his accumulated wisdom. The most recent text-books still quote Smellie as an authority, though it is two hundred years since his school became famous, and indeed he is credited with advances in the art of midwifery to which he is not strictly entitled. This criticism may appear to be heresy to some, but I have no intention of belittling Smellie's influence, which stands supreme without any questionable embellishments.

In the year 1734, when Smellie was still an obscure rural doctor, Dr. Edward Hody, a fellow of the Royal Society, published the posthumous writings of his friend William Giffard, surgeon and man-midwife, under the modest title "Cases in Midwifery." This most interesting little volume is indeed just what the title indicates; a very personal record of over two hundred confinements of interest attended by Giffard from the year 1724-5 until his death in 1731.

We know very little about Giffard except what his friend Hody tells us about him in his preface, in which he eulogises him as a "plain man, remarkable for an honest, frank behaviour," and praises him for his skill, his kindness to the poor, and his aversion to all kinds of flattery. The text which follows bears out this view, for there is no boasting, and his failures are set down as faithfully as his successes.

In his first year he recorded only ten cases, but in 1730 he made notes of seventy-one, and in the first nine months of the year in which he died he described fifty-three. All these cases have some point of interest, and it is safe to assume that he has omitted the normal and less interesting ones, even though on some occasions he recounts two cases in the same day. There can be no doubt that he became a very busy man, and that he gained considerable practical experience of his subject. We do not know who his teachers were, but he states that "Dr. Chamberlain, the most noted practitioner in Midwifry in his time in England" always gave opium for uterine inertia, and repeated the dose if necessary in six hours' time, which, with the fact that he was the first to record the use of the Chamberlain forceps, suggests that he may have been a pupil of some member of that famous family, since none of them wrote a text-book in which such treatment is described.

The late Herbert Spencer claimed that Giffard was the first to describe the method of jaw-flexion combined with shoulder-traction for delivering the after-coming head in breech presentations. This is the technique which is described in most text-books as the Mauriceau-Smellie-Veit method. There are ample reasons for giving Giffard priority over Smellie, but room for doubt in claiming that he anticipated Mauriceau.

Francis Mauriceau published his text-book in 1668, and it was translated into English by Hugh Chamberlain soon afterwards, and ran into several editions. In this book he made no mention of this method of delivering the head, about which his instructions are indeed very scanty, but was more concerned with bringing down the arms. This was a novel procedure because in his day the accepted teaching had been to leave at least one arm extended alongside the head to prevent the cervix uteri from closing on the fœtal neck in a contraction ring. The obstetrician's nightmare then, and for many years to follow, was not locked twins, but the possibility that the body might be pulled away from the head, leaving the decapitated head free in the uterus and above the brim. Both Chapman and Smellie described cases in which an energetic midwife had so decapitated the child. Many years later Matthews Duncan showed that it requires a force of 120 lbs. to pull the fœtal head from the shoulders, though, of course, severe damage must be done long before separation occurs. Heroic midwifery was performed before the advent of safe Cæsarian section,

but the heroines were not the midwives but the mothers, who endured all this without any form of anæsthesia.

But in 1710 Mauriceau published his second book, of which I know no English edition. In this book, which is mostly composed of case histories, he described the use of shoulder traction with two fingers of the other hand in the child's mouth to deliver the chin over the perinæum, because it was his belief that the chin was the chief cause of difficult delivery when the head was larger than usual. It would appear that he had stumbled upon the difficulties associated with an extended head without realising the full meaning of it. Mauriceau's views do not seem to have become generally known until they were extensively quoted by his countryman, Andre Levret in 1747, long after Giffard's death. It is impossible to state that Giffard did not know of them, though I am of the opinion that he did not, because he did not at first realise the importance of delivering the head with the face of the child turned towards the sacrum, an essential point stressed by Mauriceau. As Giffard's experience grew, he came to realise the value of turning the child into this position.

The following quotation is from one of his later cases, No. LXV:—

> "As soon as I had brought it as far as the breast, I passed up my hand and brought down first one arm, and afterwards the other, to give more room for the passage of the head; but finding it stuck there, I clapped one hand as usual under the breast, and the other behind above the shoulders to draw it out; but this would not do, so I was forced to pass up two fingers into the mouth; and at one and the same time gently pressing on the lower jaw, and pulling at the shoulders, I extricated the head."

Note that Giffard was very careful not to pull on the jaw, but to apply his traction through the other hand on the shoulders. It seems fairly clear that the fingers in the mouth were used only to produce flexion. On a previous occasion he had pulled on the jaw and produced a fracture, and it was fortunate for him that the child was already dead and indeed macerated, but no doubt the accident impressed itself on his memory.

Smellie taught Giffard's methods, and recommended his pupils to read Giffard's book, one of the few books indeed that he did advise them to read. But he does not appear to be satisfied with this technique, and when Peter Camper attended his lectures in 1749 he was advising a method of levering out the head by alternately raising and lowering the infant's trunk, and Camper copied a diagram of this method into his lecture notes. At the same time they discussed the relative merits of Daventer's method of delivering the head, which Camper had hitherto used, which was to draw the trunk towards the perinæum and deliver the occiput out from under the pubes.

Smellie's own contribution to the problem was his proposal to use forceps in breech deliveries. He first tried to do this in 1750 using his short straight forceps and was unsuccessful; but in the preface to his second volume he wrote as follows:—

> "In my first [volume] among the improvements and alterations that have been made in the forceps, I mentioned a long pair, curved to one side, which I contrived several years ago, for taking a firmer hold of the head in the pelvis when high; but I did not then recommend the use of them, because I was afraid of encouraging young practitioners to exert too great force, and give their assistance too soon. Of late, however, I have found them very serviceable in helping along the child's head in præternatural [i.e., breech] cases, after the body and arms of the fœtus were brought down, and it could not be delivered without destroying the child by overstraining the neck and jaw."

There is an excellent illustration of the forceps in use in this way in his volume of "Anatomical Tables."

I have quoted the above passage in full, as it is such a good example of Smellie's wisdom as a teacher, and his appreciation of the dangers of fœtal injury in the use of force.

I think I have quoted enough on this subject to show that Giffard deserves the credit usually accorded to Smellie for his share in the development of the accepted method of delivering the aftercoming head, which should perhaps be more accurately called the Mauriceau-Giffard method.

There are many interesting cases in Giffard's collection, but I will give one quotation from his comments on case CCXXIV.

> "I beg leave before I proceed to give any further account of the delivery, to give my opinion in a point of Midwifry, in which I differ from most authors that have wrote on

that subject. It is generally believed that the Ovum, after its impregnation and separation from the Ovarium, and its passing through the Tuba Fallopiana, always adheres and is fixed after some time to the Fundus Uteri; in this case the Placenta adhered and was fixed close to and round about the Cervix Uteri, as I have found it in many other cases, so that upon a dilatation of the Os Uteri a separation has always followed, and hence a flooding naturally ensues. It has been observed that the Ovum, if it is stopped in the Tuba Fallopiana, and does not readily pass through, will sometimes adhere to the tube (though 'tis very rarely it so happens) and there make its Nidus, and a Fœtus will be formed there; of which I have given an instance . . . "

Giffard is here describing a case of placenta prævia, of which he gives us other examples, and he is also referring to his case CLVII which was an ectopic gestation.

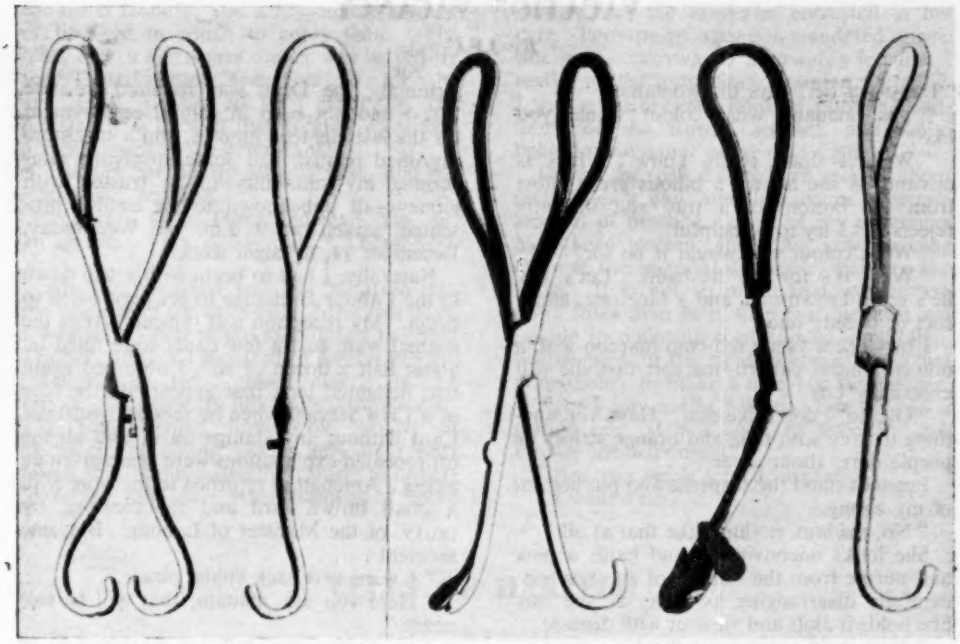
Placenta prævia had been scantily noticed first by Rueff in 1554 (McClintock), and it had been generally believed that the placenta always adhered to the fundus uteri, but that it might be dislodged early in labour and come to present itself before the fœtus. Indeed in Mauriceau's time there was a discussion as to whether it ought then to be pushed back, or be removed and separated by cutting the cord before delivering the baby. The first to realise that it might actually have become attached to the lower segment was Paul Portal in 1682, who stated " Le placenta ne s'attache pas toujours sur le fond de la matrice; quelques fois il peut s'insere au voisinage du col," and realised that hæmorrhage then became inevitable as soon as the cervix dilated. Giffard was the first Englishman to describe Placent prævia, and it is possible that he may not have known of Portal's description, which was not published in this country until 1763. Even if it is not an original observation, he deserves some credit for his thoroughness in reporting it.

The ectopic gestation to which he refers was a most interesting case, for the patient first had hæmorrhage about the third month, and then managed to carry the gestation until the sixth month, when the pelvic hæmatocele, which Giffard had felt per vaginam, burst through the anus, and the woman died six days later. Giffard then performed a post-mortem examination with the help of Mr. Nourse and Dr. Dodd, both of St. Bartholomew's Hospital. The case was reported to the Royal Society, and engravings of the specimen were made on the orders of the president, Sir Hans Sloane, and these are printed in the book. It would be interesting to know whether the specimen found its way into the museum at the hospital. This is the first full account of ectopic gestation of which I am aware, though Smellie stated that a case had been mentioned by Jean Riolan about 1648.

Giffard also described a case of hydatidiform mole in 1730, the first case recorded in this country. The condition had been described by Lamotte, of Valognes, in Normandy, in 1715. Smellie did not see a case in all his experience, and had to describe those recorded by others.

But perhaps the most interesting part of Giffard's book is his description of the use of forceps for the first time on June 28, 1728. The forceps he used, and of which there is an illustration, were substantially of the Chamberlain pattern, and I have already suggested that he might have known one of the Chamberlain family and obtained the secret in that way. Edmund Chapman, of Halstead, had described the use of the forceps the year before the publication of Giffard's book, but it was not until he brought out his second edition in 1735 that he published the illustration of his own instrument.

In addition to the engraving of Giffard's forceps, which he habitually called his " extractor," there is on the same folding plate an engraving of " The extractor as improved by Mr. Freke, Surgeon to St. Bartholomew's Hospital." This is a wonderful tool, with a concealed crochet in one handle, and a blunt hook on the other, the whole contraption made to fold up. Wallace Johnson said that Freke was a mechanical genius, but a poor obstetrician. He invented the probe pointed scissors, and made the first pair himself, so he may also have made his own forceps. He became the first curator of the hospital's museum, and was a member of the first Medical Society in London, founded by John Fothergill in 1752, which included amongst its members William Hunter and William Pitcairn. Peter Camper met him at one of the club's meetings on July 24, 1752, and tells us that Freke highly recommended Valerian for nervous disorders. The only portrait of Freke that I know is Hogarth's drawing of the anatomy



Mr. Giffard's Extractor

The Extractor as improved by Mr. Freke, Surgeon to St. Bartholomew's Hospital.

dissection at Surgeon's Hall, in which he is shown presiding over the meeting on a high chair.

We do not know whether Giffard had the drawing of Freke's forceps made for the book before he died, in which case he would probably have intended to write something about them, or whether this was an addition made by Dr. Hody, who should surely have added some comment himself. But it does lead me to suggest that Giffard may have had some connection with St. Bartholomew's Hospital and with its staff. In confirmation of this possibility is the fact that most of his patients seem to have lived in that part of London which became the old Bart.'s "district," namely, the western half of the City around Holborn, Fleet Street, Charterhouse and Bartholomew Close. With only this circumstantial evidence one cannot confidently claim him as a Bart.'s man, but it is pleasant to think that Bart.'s was clearly the hospital with which he was most closely associated.

REFERENCES:

Abraham, J. J. "Lettsom, his Life, Times, Friends and Descendants." London. 1933.

Chapman, Edmund. "A Treatise on the Improvement in Midwifery, chiefly with regard to the Operation." 2nd Edition. London. 1735.

Giffard, W. "Cases in Midwifry." London 1734.

Johnson, R. Wallace. "A New System of Midwifery, founded on practical observations." London. 1769.

Levret, Andre. "Observations sur les causes et les accidens de plusiers Accouchemens Laborieux." 3rd Edition. 1762.

Mauriceau, F. "The Diseases of Women with Child," translated by Hugh Chamberlen. 8th Edition. London. 1752.

Nuyens, B. W. Th. "Travel Journals of Peter Camper." Opuscula Selecta Neerlandicorum de Arte Medica. Amsterdam. 1939.

Smellie, Wm. "Theory and Practice of Midwifery," edited by A. H. McClintock. London. 1876.

Smellie, Wm. "Anatomical Tables." 2nd Edition. Edinburgh. 1788.

Spencer, Herbert. "History of British Midwifery." London. 1927.

Weber. A. Ph. W. "Placenta Prævia" (M.D. Thesis). Zwolle. 1942.

VACATION VACANCY

By J.F.C.

" I WANT a tie," says the woman.

" Yes, madam, what colour would you like?"

" Well, I don't really know." This is obvious as she heaves a bilious green effort from the bottom of a tray and instantly rejects it. I try to be helpful.

" What colour suit would it be for?"

" Well, it's for my husband. Let's see, he's got a brown one, and a blue one, and a sort of tweedy one."

I produce a vague red-cum-maroon with a non-committal pattern, the sort that she will eventually buy.

" Oh, no, I don't like that. Have you anything in grey with blue and orange stripes or purple dots, about seven . . . ? "

I cannot stand the suspense and put her out of my agony.

" No, madam, nothing like that at all."

She looks unconvinced, and hauls a pink and purple from the bottom of another tray, carefully disarranging as many as she can. She holds it aloft and views it with distaste.

" Now, he'd never wear that!"

At last we are getting somewhere. Only another few hundred samples remain to be eliminated. I place several more in front of her for rejection.

" It's very difficult," she says.

With a sigh, I agree.

" Men are such fussy creatures."

This time I cannot agree. I suppress my masculine instincts, and the obvious retort, and remain mute.

" Perhaps, I think I had better bring him along with me to choose it." She smiles. " I think I'll leave it, if you don't mind."

While I begin the fantastic game of snakes and ladders to straighten out the tangle, and my hollow laughter still echoes in my mind, let me explain that I am not doing this for the good of my health. We have heard a lot about the shortage of money, a state not unfamiliar, I believe, to students, and I am attempting to extend my exchequer as an assistant in one of the branches of a big London store.

The whole thing began in November, when I completed a form of governmental dimensions. Unwittingly, I started on its inevitable course a great and ponderous machine. While I was still in the throes of terminals, the Dean was required to state that I had not been in gainful employment for the last eighteen months, and a still more mystified relative had some misgivings concerning my suitability to be trusted with money—all unbeknown to me until I presented myself at 9 a.m. on Wednesday, December 14, to begin work.

Naturally, I had to begin with a trip down to the Labour Exchange to get permission to begin. My reception was typical. After the normal wait, just a few cards were filled in, about half a dozen or so. I observed again that delighted look that appears on the face of a Civil Servant when he sees an Insurance Card without any stamps on it, and all the oft-repeated explanations were again given an airing. At length, I returned to the store with a small brown card and the blessing, by proxy, of the Minister of Labour. But, one moment . . . .

" I want two back studs, please."

" Here you are, madam; that will be two pence."

I complete the bill, a masterpiece of ingenuity. As well as the studs, I note the date, department, my own number, the total amount of the purchase (2d.) and the vital information that the customer is going to pay cash and take the goods with her—in triplicate! For the first few days, I was not sufficiently responsible to be allowed to complete this document myself, but I am anticipating.

Thus, I entered the employ of one of Londons largest firms and became a retail operative. I was taken down to the Men's Wear department and introduced to the Departmental Manager, Mr. King. He, in his turn, introduced me to the other four assistants, and set me to work tidying up in order to learn the stock. In many places, the addition of a temporary would lead to some suspicion and rivalry, but I was most fortunate in being placed under Mr. King, for no one could be more helpful or co-operative; indeed, the whole spirit in the department is one of friendliness and courtesy.

I have been most impressed from the start with the *esprit de corps* of the whole store, from the executives down to some of the rather brittle females who are considered " Juniors." A good canteen is provided, with

the usual facilities and a reasonable amount of time off in which to enjoy them. The other day, a Christmas dinner was served by the Departmental Managers to all the assistants. It was all very gratifying, but perhaps it is as well that trained waitresses are employed in the restaurant!

The ties are nearly all tidy now, and the *status quo* restored.

"Garters, sir? Three and six. Yes, sir, all elastic. Very good value. Thank you, sir."

All that remained was my initiation into the vagaries of the sales bill. After two days, I was summoned to the sanctum of the Staff Trainer, whither I repaired to meet a benign, black-frocked lady, grown elderly in the service of the firm. In this I was disappointed. The Staff Trainer turned out to be an extremely becoming young lady in a neat tweed suit, enthusiastically waiting to impart to myself, and two other trainees of more mature age, the mysteries entrusted to her care. Perhaps my attention wandered during this lecture; anyway, I afterwards felt that I really needed more Staff Training. Finally, I was given my own book of bills, the hall-mark of the trusted servant, and stood behind my counter in my own right.

During the rush, I have been making about sixty sales a day, and that means a certain amount of hustling. Most of my customers have been women, and I am now learning more of the essential differences between the sexes. It is not so much that women are more fussy than men, than that they are just unable to make up their minds; very often, a little push in the right direction is all that is necessary to make a sale—or to lose one.

Here I stay until Christmas Eve. Time is getting on. It will soon be time for tea. Excuse me a moment. . . .

"Are you being served, madam?"

"I want a tie . . . . "

CELLS OF HARLECH

(*To that tune*)

By M. A. Smith

Fellow white cells on to battle, toxins on the surface rattle, telling us it's time to tackle germs of evil eye.
Skim along peripheral serum, barging through until you're near 'em, fibrinate and do not fear 'em, shake your pseudopods.
Enzymes call to action, pseudopod retraction,
Spread confusion by diffusion, change the pH fraction.
Forward now o'er fibrin lattice, driven on by courage, that is
Just the same as chemotaxis to us leucocytes.

See the germs, they're streptococci, all in chains yet round and stocky, little chaps yet very cocky, don't know their own place.
For their enzymes lyse our fibrin, lyse our red cells, leucocidin is the lethal foe we've tried in vain to neutralise.
Opsonins we need you! Monocytes we lead you!
Do or die we always cry as, made effete, we feed you;
Phagocyte them, plasma bite them, surface tension you invite them,
To their doom we shall indite them:—Cocci, clump in fear!

When we've done the macrophages come along by several stages, eat up all the cells and debris with voracious maw.
Then Repair in all its glory presently unfolds its story, making new the tissues gory, once a field of death.
Differentiation leads to maturation,
Every cell knows very well its true and proper station;
All combine in order blending, do their tasks with verve unending,
Strikes and stops are never pending—communistic state!

CORRESPONDENCE

THOUGHTS ON THE PRESENT DISCONTENTS

To the Editor,
St. Bartholomew's Hospital Journal.

Dear Sir,

"Houses are very scarce, and the landlords are all gone mad, they ask such prices ——."* This apt comment upon the recent state of affairs was written by Charles Darwin in 1838 when, after his return from the voyage of the "Beagle," he was seeking a house in London, and his memorandum "Albany Street—No. 161, £100 premium" has a familiar sound today. Eventually he chose 12 Upper Gower Street, which was destroyed by a bomb in 1941.

But in some other respects the world has changed. The many students of Bart.'s who live in digs may be interested to know that a few years after Darwin was settled in Gower Street Charlotte Brontë told in her first novel, "The Professor," the story of a young Etonian who conducted the correspondence in French and German of a textile firm; his sole income was his salary of £90 a year (!), and on one occasion he rang the bell (!!) in his digs and was served with a meal of cold meat (!!!).

E. L. KENNAWAY.

December 7, 1949.

* "Charles Darwin and the Voyage of the Beagle." Edited by Nora Barlow. Pilot Press, London, 1945.

THE CAMBRIDGE GRADUATES CLUB OF ST. BARTHOLOMEW'S HOSPITAL

To the Editor,
St. Bartholomew's Hospital Journal,

Dear Sir,

We would be grateful if you would allow us the hospitality of the Journal to say that the Cambridge Graduates' Club of St. Bartholomew's Hospital, which, with the exception of wartime gaps, has met annually since 1877, will hold a dinner on Friday, February 24, 1950, at Frascati's Restaurant, Oxford Street.

All Bart.'s men who are Cambridge Graduates, including graduates not yet medically qualified, are automatically members of the Club, and we should be grateful to hear from any who do not receive notices.

For the benefit of those who have recently joined the Hospital, and whom we would particularly like to see at our gatherings, we should mention that the Bart.'s Club is distinct from the Cambridge Graduates' *Medical* Club.

Yours faithfully,
H. J. BURROWS,
R. A. SHOOTER,
Hon. Secretaries.

December 5, 1949.

CORRECTION: P.U.O.

To the Editor,
St. Bartholomew's Hospital Journal,

Dear Sir,

Might I be permitted to crave for the super luxury of placing on record how we in Ceylon, His Majesty's New Young Dominion (note the first three letters, N.Y.D.) have overcome the official mind of His Armed Forces and more happily Nature's classical attitude towards a vacuum?

We have been labelling our Tropical Fevers of obscure origin, of which there are still quite a number, as N.Y.D., "Not Yet Diagnosed."

I have no doubt that Osler, whose dictum in a nutshell, "Treat Typhoid Fevers with plenty of water outside and plenty of water inside," still holds sway in the Tropics, and also Sir Archibald Garrod, whose House Physician I had the honour to be at St. Bart.'s during World War 1, would both have hailed with approbation these new initials from Ceylon as an alternative for their "Pyrexias of undetermined origin."

We have also been constrained in rare cases to use three other letters when N.Y.D. patients reach the autopsy chamber and the Pathologist after repeated post mortem bacteriological, biochemical and microscopic examination is still unable to diagnose the disease. The cause of death is then entered as G.O.K.

I remain, Sir,
Yours faithfully,
GUNARATNAM COOKE, M.D.,
Acting Senior Physician.

General Hospital,
Colombo, Ceylon.
December 13, 1949.

THE FIRST ACCOUNT OF CALCIFIED PERICARDIUM?

Dr. George Graham has pointed out the following passage in the *Memoirs of the Duke of Sully*, 1597, p.35, D.2. The earliest account of calcification of the pericardium was thought to be by Morgagni (1681-1771).

Gaspard Shomberg, Count de Nanteuil. This disorder was a difficulty of breathing, which, on opening his body after death, was found to proceed from an ossification of the left side of the pericardium and some of the neighbouring parts. He was employed in drawing up the Edict of Nantes, as will be observed hereafter: and he did many other services to the State. M. de Thou highly commends his character and abilities, both as a warrior and as a statesman.

The book from which this translation is taken is: *Memoirs of the Duke of Sully . . . A New Edition . . . with . . . An Historical Introduction attributed to Sir Walter Scott, in four volumes. Vol II.*

London: Henry G. Bohn, York Street, Covent Garden, MDCCCLVI.

SPORT

RUGBY CLUB

Dec. 3rd. v. Old Alleynians. Away. Lost 0—3.
Dec. 7th. v. Fighter Command. Home. Won 9—0.
Dec. 10th v. Rugby. Home. Lost 3—18.
Dec. 17th v. Old Millhillians. Home. Won 11—6.
Dec. 31st v. Middlesex Hospital. Away. Lost 3—8.

The game with the Old Alleynians was played during a full gale which blew straight up and down the pitch. This was an excellent game with honours going to Picthall and Jones, for grim determined tackling and neatly placed cross kicks. In the forwards, Moyes was outstanding for his hooking which completely subdued his opponent, the Surrey County hooker. Bart.'s were penalised in the second half and O.A.s scored with a penalty goal; this was the only score of the game and it was generally agreed that a draw would have been a good result.

Fighter Command provided noble opposition and a fast game resulted. Bart.'s triumphed because of good all-round play and determined running by the backs.

In the game against Rugby, Bart.'s were playing below form; we were very unlucky to lose Picthall with a torn rectus muscle after only 10 minutes play; he stayed on, however, but was obviously in pain.

The forwards were good in parts but we did not fall on the ball at all or tackle sufficiently well. A disappointing game.

After being down six points at half time against the Old Millhillians, Bart.'s got together as a good attacking force and won a hard-fought game.

Bart.'s gave the Middlesex Hospital a trying time on Old Year's Day. We were definitely unlucky to lose this match. All our backs played storming football with Mike Davies outstanding; his try in the first half was delightful, he kicked ahead and raced the full back for a distance of 40 yards or more to beat him to the touch down. In the second half Bart.'s were within 30 yards of the Middlesex line for most of the time and did everything but score. An excellent game.

Half Season Summary

	Games	Won	Drawn	Lost	Points For	Points Against
1st XV	18	5	2	11	105	154
A XV	14	10	0	4	268	60
XA XV	11	7	1	3	100	62
B XV	8	4	0	4	66	100

Members of the Club commenced to enjoy the "Great Game" once more with the start of the new season on September 10. Grounds were very hard and we suffered a heavy crop of injuries; the turnouts for practices, however, were excellent, and they certainly formed the basis for fit men and stamina during games.

The 1st XV now consists of players who play as a team and not as a bunch of individuals as was the case at the beginning of the season. They have played very well, always to the best of their ability and with much determination; a little luck here and there would have altered radically the number of matches won, since often only two or three points were in it.

Mike Gompertz has led the A XV to incredible feats, their best effort being 52—0 against the R.V.C. 268 points scored over only half way through the season is indicative of a very good reserve of players for the Hospital to call upon.

At one time it looked as if the XA XV were to be unbeaten; holidays and injuries decided otherwise, however. B. W. Foy has captained the side throughout and has cultivated a team spirit which has brought about these good results.

The B XV has taught a good number of non-players the rudiments of Rugger. Good material has been found for future years, and consequently this side has never been the same two weeks running. Alan Fuller has welded his team together and reports that all players have enjoyed themselves, which is the thing that really matters.

We are pleased to record that M. J. A. Davies and K. A. Clare played for United Hospitals on Boxing Day against Stratford.

We now look forward to the remainder of the season, and are eager to do battle in the annual affair of the Cup!

BOOK REVIEWS

HOW YOUR BODY WORKS, by Geoffrey H. Bourne. Sigma, 1949, pp. xvi+228. Price 12s. 6d.

The Reader in Histology at the London Hospital Medical College here presents to the layman an entertaining description of human physiology. The book should also form a useful introduction for all intending entrants into medicine and allied fields, and it is adequately illustrated by plates and diagrams. Brief historical details, with names of the more prominent contributors to the development of physiology, are included. The name of the author ensures that the general public is not led astray by an amateur attempt at popularising a subject that should be of vital interest to everybody.

The index is arranged by an extremely corrupt version of the alphabet, and some of the entries are not only inept but inaccurate.

J. L. T.

SYNOPSIS OF MEDICINE, by Sir Henry Tidy. John Wright, Bristol, 1949, 9th Edition, pp. 1,264. Price 30s.

The principal criticism which has been levelled at this book is its lack of balance, in that the relative frequency and importance of a disease is not in proportion to the amount of space devoted to that disease. This is so, but is a cause for commendation rather than criticism for two reasons. Firstly, that the commoner diseases should be known adequately by the time a synopsis is needed; and secondly, that the more common diseases are better understood by readers than the less common, so that the author devotes space to explaining the latter. This is as it should be.

The scope of the book remains the same, but a thorough revision has been undertaken and much rewriting been entailed. All the established advances since the previous edition have been included and of particular note is the withdrawal of Hanot's Cirrhosis from the text, in accordance with current teaching.

An essential for the final year student, and a very useful book to others.

THE POCKET PRESCRIBER and Guide to Prescription Writing, by D. M. Macdonald, revised by A. G. Cruikshank! 14th Edition. Livingstone, 1949, pp. 275. Price 4s. 6d.

"The young practitioner's vade-mecum" would be a suitable sub-title for this invaluable booklet. It contains a very reasonable selection of remedies under the headings of the appropriate disorders, besides full posological tables for adults and children, diets, recent and proprietary drugs, poisons rules, hints on prescribing—and a few notes on medical etiquette, so rarely seen in print! The matter has been completely revised. Most of the prescriptions are written in English, and doses are given in both metric and Apothecaries notation.

A SHORT PRACTICE OF SURGERY, by Bailey and Love. H. K. Lewis, 1949, 8th Edition, V parts. Price 52s. 6d.

Opinions on this "classical" text-book are divided. Certain of the methods advocated therein—notably the Oschner-Sherren treatment of appendicitis and peritonitis; the reduction of intussusception by saline enemata, etc.—are not generally accepted in this country. On these grounds many surgeons condemn the book out of hand.

Students, however, for whom this book is intended, will continue to regard it as the best short standard text-book of surgery.

We regard the book with mixed approval. It is undoubtedly readable and in this present edition clarifying amendments have been made, but we add the caution that it is essential for any student using it to determine the "unacceptables." They are not numerous, but their source is easily recognised by examiners, who may fall into the category mentioned above.

The presentation in five parts is an innovation to be praised. The handy size and convenient arrangement are improvements on the unwieldy volume of the past, and we are assured that it means a more up-to-date edition. More pictures have been added and some of doubtful merit in previous editions have been improved or replaced.

In all, an improvement on what was already a good book.

GREEN'S MANUAL OF PATHOLOGY, Revised by H. W. Vines. Baillière, Tindall & Cox, 1949, 17th Edition, pp. viii + 1,200, Figs. 730. Price 42s.

It is surprising that this book is not more generally popular among medical students. Perhaps its size—1,200 pages—is formidable. The section on general pathology occupies a third of the book, an amount of space warranted by this aspect. The chapters on inflammation and neoplasms are particularly clear and easy to follow. Of the special pathology sections perhaps the best is the treatment of the confusing subject of liver disease. Nephritis is still, however, classified under acute, subacute and chronic. Among the best features of this book are the illustrations; in their number and quality they are excellent.

AN INTRODUCTION TO CLINICAL SURGERY, by C. F. M. Saint. H. K. Lewis, 1949, 2nd Edition, pp. viii + 384., Illus. 373. Price 45s.

This book, as the title states, is designed for the student entering upon surgery for the first time, and is excellent within its necessarily limited scope. It is an exhaustive aid to note-taking, and is invaluable in answering the eternal query, "And what shall I ask him now?" The chapters, each system being considered in turn, are arranged in similar pattern, enabling order to be maintained among a student's usual chaos of facts. It is profusely illustrated, some of the photographs being truly horrific, as only African pathology can be. The price, however, is prohibitive.

PENICILLIN, its practical application, Edited by Prof. Sir Alexander Fleming. 2nd Edition. Butterworth, 1949, pp. xiii + 491. 63 illus. Price 30s.

The first edition of this book was published in 1946. Since then penicillin has become freely available and the more general experience gained from its use has led in this second edition to revision and a larger book. As before, it is produced under the general editorship of Professor Sir Alexander Fleming and it consists of a series of articles by various authorities covering every aspect of the practical application of penicillin. In it will be found, for instance, an historical review of the development of the drug, articles on its production, properties, laboratory control and administration and chapters describing the use of penicillin in a wide range of human and animal infections. A new chapter has been added on streptomycin and in an appendix chloromycetin and aureomycin are briefly mentioned.

While having the advantage of combining the views of many experts in one book, the assistance of so many collaborators is not without its drawbacks and, as the Editor stated in the first edition, is liable to lead to overlapping and differences of opinion. The second edition is no exception and there is a certain amount of unevenness between the various articles and, in a few places, factual errors.

For all that, this edition is likely to satisfy the needs of most readers, whether they wish to know more about the properties of penicillin or how to use it. What they fail to find in the text, they should be able to obtain through the lists of references, which, in most of the articles, are extensive.

TEXT-BOOK OF BACTERIOLOGY, by R. W. Fairbrother. Heinemann, 1949, 6th Edition. pp. 484. Price 20s.

This well-known book which has passed through six editions in twelve years, a fact which speaks for its popularity, has again been revised. The advances in this subject, other than antibiotics have been few, but those that exist have been included. The section on antibiotics has been extended to mention the newer discoveries and streptomycin is discussed in detail.

As an outline of medical bacteriology the book remains unsurpassed and its continued popularity is assured.

EXAMINATION RESULTS

UNIVERSITY OF OXFORD

Examination in Pharmacology for Medical and Surgical Degrees

Keil, A. McL. Wynne-Jones, A. P. J.

Final M.B. Examination

Part I Surgery, Midwifery & Gynæcology

Hodson, J. M. Mason-Walshaw, K. R. Muir, B. J. Turner, J. C.
Lester, J. P.

Part II Principles & Practice of Physic, Pathology & Pharmacology

Cathcart, D. B. Garrod, D. C. H. Roffey, P. J. Turner, J. C.
Cooper, M. B. S. Lester, J. P. Tomlinson, J. D. W.

UNIVERSITY OF CAMBRIDGE

2nd B.M. Examinations **Michaelmas Term, 1949**

Medicine, Surgery & Midwifery

Ainley-Walker, J. C. S. James, H. V. Tallack, F. V. von Bergen, S.
Bambridge, H. E. Munro-Faure, A. D. von Bergen, J. E. Wheelwright, J.

October, 1949

UNIVERSITY OF LONDON

Examination for the Postgraduate Diploma in Psychological Medicine

Brenman, E.

Part A only

Warren, H. de B.

D.Sc. for Internal Students

Franklin, K. J.

December, 1949

Examination for the Academic Postgraduate Diploma in Medical Radiology

Frazer, A. L.

CONJOINT BOARD

Pre-Medical Examination

December, 1949

Chemistry

Humphris, P. N. A. Menage, J. A.

Physics

Greenwood, R. A.

Biology

First Examination

November, 1949

Anatomy

Mellows, J. W.

Physiology

Mellows, J. W. Zilliacus, J. O.

Pharmacology

Albright, S. W.	Dick, D. G.	Matthews, P. D.	Taylor, W. N. A.
Apthorp, G. H.	Drysdale-Anderson, R. J.	O'Sullivan, D.	Thomas, G. E. M.
Barnes, J.		Picthall, G.	Thomas, H. A. J.
Bowers, K. E. J.	Fallows, L. G.	Power, G. H. D'A.	Trevan, A. C.
Carroll, D. S.	Haigh, P. G.	Reading, J. H.	Whittard, B. R.
Charles, H. P.	Holbrook, B. W.	Rosser, E. M.	Wilkinson, B. R.
Connell, P. H.	Ibbotson, R. N.	Ryan, J. F.	Williams, D. K.
Cox, W. H. A. C.	John, A. H.	Smith, D. P. Q.	Willis, P. F.
Dadswell, J. V.	Jones, K.	Tabor, A. M.	Wright, A. N. H.
Dean, D. W. J.	McKinna, C.		

SOCIETY OF APOTHECARIES

Final Examination

Pathology	Medicine	Midwifery
Bexon, W. H.	Griffiths, A. W.	Hewson, J. P.

HOUSE APPOINTMENTS

January 1 to March 31, 1950

At St. Bartholomew's Hospital

Dr. Bourne	M. Wilkinson	P. H. Bass
Dr. Cullinan	R. Buri	J. D. W. Tomlinson
Dr. Scowen	I. R. McWhinney	A. D. Munro-Faure
Prof. Christie	G. A. Court	Miss J. Wheelwright
Mr. Hume	W. L. Timmins	D. C. H. Garrod
Mr. Corbett	E. A. Cooper	J. S. Cox
Mr. Hosford	O. O. F. Ffooks	J. E. von Bergen
Prof. Sir James Paterson Ross	A. Bates	H. V. James
Casualty H.P.	J. R. Harris	
Children's Dept.	B. B. Reiss (B.2)	J. C. Turner
E.N.T. Dept.	B. J. Batt (B.2)	
Skin & Gynæ Dept.	G. A. Coombs (B.2)	
Eye Dept.	J. Monckton (B.2)	
Intern.	J. W. S. Harris (B.2)	
Anæsthetists	J. Q. Matthias (B.1)	W. G. Dawson (B.2)
		(B.1) (temporary)
Dental Dept.	D. Weinstock	
Orthopædic Dept. (Accident Service)	M. J. Kehoe	

At Hill End Hospital

Dr. Spence		J. C. S. Ainley-Walker
Mr. Naunton Morgan	J. W. Latham	M. B. S. Cooper
E.N.T. Dept.	M. E. Johnstone (B.2)	
Orthopædic Dept.	P. H. R. Hawkes	H. S. Brown
Thoracic Dept.	H. W. Stanley (B.2)	
Neuro-Surg. Dept.	F. M. Shattock (B.2)	
Intern.	R. A. Struthers (B.2)	
Anæsthetists	I. Jackson (B.1)	W. J. Wright (B.2)
		K. Orr-Hughes (B.2)

Alexandra Hospital

R.M.O.	M. Reckless

BAILLIÈRE, TINDALL & COX

recent editions of standard textbooks

BUCHANAN'S ANATOMY

Edited by FREDERIC WOOD JONES, D.Sc., M.Sc., M.B., B.S., F.R.S., F.R.C.S. Collins Professor of Anatomy at the Royal College of Surgeons. Eighth Edition. Pp. viii + 1616 with 847 illustrations. **45s.**

BIGGER'S BACTERIOLOGY

By JOSEPH W. BIGGER, M.D., Sc.D., F.R.C.P., D.P.H., Professor of Bacteriology and Preventive Medicine at the University of Dublin. Sixth Edition Pp. xvi + 548 with 4 coloured plates and 100 illustrations. **20s.**

GREEN'S PATHOLOGY

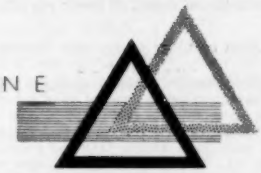
Revised by H. W. C. VINES, M.D., Pathologist to Charing Cross Hospital and Dean of Charing Cross Hospital Medical School. Seventeenth Edition. Pp. viii + 1216 with 12 coloured plates and 730 illustrations. **42s.**

MAY & WORTH'S DISEASES OF THE EYE

Revised by MONTAGUE L. HINE, M.D., F.R.C.S., Surgeon to the Westminster Ophthalmic Hospital. Tenth Edition. Pp. xii + 544 with 32 coloured plates and 331 illustrations. **22s. 6d.**

7 & 8 Henrietta Street London W.C.2

THREE IN ONE



trade mark **'SULPHATRIAD'** *brand*

Compound Sulphonamide

THREE POWERFUL SULPHONAMIDES IN ONE PREPARATION

Research directed towards overcoming the risk of crystalluria attendant upon, and limiting, treatment with certain of the easily absorbed sulphonamides led to the use of mixtures of sulphonamides. The possibility of crystalluria and consequent renal damage is lessened because the solubility of any one sulphonamide is not interfered with by the presence of another.

'Sulphatriad' combines the high bacteriostatic activity of its constituents, and in therapeutic doses the risk of renal damage is practically negligible.

'Sulphatriad' is supplied in the form of tablets, and as a palatable suspension particularly advised for children.

Each tablet or teaspoonful (4 c.c.) suspension contains:—
Sulphathiazole 0.185 Gm., Sulphadiazine 0.185 Gm., Sulphamerazine 0.130 Gm.

Supplies:—'SULPHATRIAD' tablets are supplied in containers of 25, 100 and 500 tablets
'SULPHATRIAD' suspension is supplied in bottles of 4 and 80 fl. oz.

Information Service

In those fields of therapeutics in which there is greatest activity it is inevitable that standard text books are sometimes unable to keep pace with important new developments. The medical student who wishes to keep abreast of such developments but cannot spare the time to consult original articles will often find that the publications issued by the manufacturers of new drugs are of considerable value.

You are cordially invited to communicate with us whenever you feel we might be of help. We would be obliged if you would include in any communication particulars of your medical school and status (i.e., whether clinical or pre-clinical).

manufactured by

MAY & BAKER LTD

48287

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM

Varicose Ulcer of Long Duration Healed by Elastic Compression Therapy

CASE HISTORY: E. S. Housewife aged 72 years. Varicose ulcer of 27 years duration upon antero-lateral aspect of lower 1/3 left leg. (Fig. 1.)

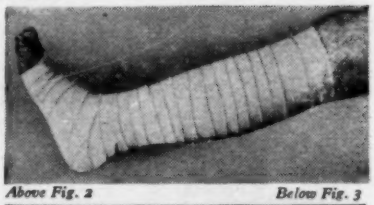
TREATMENT: *June 21st*: Area of ulcer 56 sq. cms. Elastoplast applied as follows:—
No dressing to ulcer. Stirrup from head of fibula along lateral side of leg, under sole and up medial aspect of leg to level of tibial tubercle. Long strip from tibial tubercle along anterior surface to base of toes. Elastoplast applied as continuous circular turns from base of toes to tibial tubercle enclosing heel, each turn overlapping the preceding one by 2/3 of its width. (Fig. 2). One and a half bandages were required and were applied as tightly as possible by hand. Patient instructed to perform normal household duties.

PROGRESS: *June 28th*: Area 56 sq. cms. Ulcer base clean. Odour far less objectionable. Elastoplast re-applied as before. Patient seen at fortnightly intervals. Area of ulcer calculated at each visit. Elastoplast re-applied as before.
July 21st: Area 30 sq. cms. Odourless.
September 1st: Area 7 sq. cms.
November 3rd: Area ½ sq. cm.
November 24th: Ulcer healed. Total duration of treatment 22 weeks. (Fig. 3).

FURTHER TREATMENT: *December*: Elastic stocking supplied. *February*: Juxtafemoral ligation and retrograde injection of left internal saphenous vein.

The details and illustrations above are of an actual case. T. J. Smith & Nephew Ltd., of Hull, manufacturers of Elastoplast, publish this instance—typical of many in which their products have been used with success.

Fig. 1



Above Fig. 2 *Below Fig. 3*

ARNOLD

Recently Published

THE PATHOLOGY OF ARTICULAR AND SPINAL DISEASES.
By D. H. COLLINS, O.B.E., M.D. viii + 332 pages. 199 Illustrations. 35s. net.

A profusely illustrated book on the pathology of an important group of diseases. It will be of particular interest to pathologists, orthopaedic surgeons and rheumatism specialists.

FORENSIC MEDICINE.
By KEITH SIMPSON, viii + 335 pages. 114 illustrations and 2 coloured plates. 16s. net.

GYNAECOLOGICAL AND OBSTETRICAL ANATOMY.
By C. F. V. SMOUT and F. JACOBY, xii + 248 pages. 40s. net

LECTURES ON DISEASES OF CHILDREN.
By SIR ROBERT HUTCHINSON, Bart., M.D., F.R.C.P. and ALAN MONCRIEFF, M.D., F.R.C.P. NINTH EDITION. viii + 478 pages, 108 illustrations. 21s. net.

THE COMMON INFECTIOUS DISEASES.
By H. S. BANKS, M.D., F.R.C.P. viii + 354 pages, 90 illustrations. 21s. net.

A clinical account of the common fevers and infections, written by the superintendent of one of the largest and most up-to-date "Fever" hospitals.

A PRACTICE OF ORTHOPAEDIC SURGERY.
By T. P. McMURRAY, C.B.E., M.B. THIRD EDITION. viii + 444 pages, 191 illustrations. 30s. net.

ACUTE INTESTINAL OBSTRUCTION.
By RODNEY SMITH, M.S., F.R.C.S. xii + 256 pages, 101 illustrations. 18s. net.

HUTCHISON'S FOOD AND THE PRINCIPLES OF DIETETICS.
Revised by V. H. MOTTRAM, M.A. and GEORGE GRANTHAM M.D., F.R.C.P. TENTH EDITION. xxvii + 728 pages, 28 illustrations. 25s. net.

Complete Catalogue and descriptive leaflets on request.

Edward Arnold & Co.
41, MADDOX STREET, W.1

SAFE SULPHONAMIDE THERAPY

with

'SULPHAMEZATHINE'

TRADE MARK

(Sulphadimidine B.P.C.)

During recent years a number of eminent authorities have expressed a preference for 'Sulphamezathine' and have drawn attention to its outstanding advantages in the treatment of bacterial infections.

The following special characteristics of 'Sulphamezathine' administration are of importance in medical practice.

'Sulphamezathine' is one of the least toxic of the sulphonamides. It is well tolerated and rarely produces unpleasant effects of any kind.

Renal complications are almost unknown. Additional fluids and alkalis are unnecessary.

Excretion of 'Sulphamezathine' is relatively slow, so that effective blood levels can be easily maintained.

'Sulphamezathine' is available in the form of tablets (0.5 gramme); lozenges; oral suspension and powder; and as the sodium salt in sterile solution for parenteral administration.

Literature and further information available, on request, from your nearest I.C.I. Sales Office — London, Bristol, Birmingham, Manchester, Glasgow, Edinburgh, Belfast and Dublin.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED

A subsidiary company of Imperial Chemical Industries Limited

WILMSLOW, MANCHESTER

ICI

2.2.60

W. H. BAILEY & SON LTD.

SURGICAL INSTRUMENT MAKERS

BAILEY'S CLINICAL THERMOMETERS

Every Thermometer is guaranteed, clearly marked

½ Min. Mag. 3/6 each

SOLID STEEL SCALPELS. 4/6 each

STETHOSCOPES

Hospital and Invalid Furniture

D. 1203. **BINAURAL STETHOSCOPE**
Wide Chestpiece with Thumb Rest. 25/- each

SC 1692
Head Mirror on Web Band
Size 3½" dia..
Centre hole ... 25/- Other patterns from 16/6

WHY NOT SEND YOUR REPAIRS TO US?

SCISSORS, SCALPELS KNIVES of all descriptions and RAZORS Ground and Set. HYPODERMIC SYRINGES repaired

LOWEST PRICES

BAILEY'S DIAGNOSTIC SETS D.1681 consisting of May's Ophthalmoscope, Auriscope, with 3 Specula, Duplay's expanding Nasal Speculum, Angular Laryngeal Lamp and two Mirrors, Tongue Spatula and Handle with Rheostat to fit the above instruments, complete in case, with spare lamp. PRICE complete £7 2 6. Auriscope, with 3 Specula, small battery, handle and spare lamp in case £3 0 0

PRICES RULING AT DATE OF DESPATCH

10% DISCOUNT Allowed to Students mentioning this Advert

GERrard 3185 45 OXFORD STREET
2313 2 RATHBONE PLACE

LONDON, W.1

SUPPLEMENTARY UNITS

help the young man over the Financial Stile!

FOR LESS THAN £1 PER MONTH (ranking for Income Tax Relief) . . . a healthy life aged 30 can secure life cover of £1,000 carrying with it valuable conversion rights.

CM&G

Supplementary UNITS POLICY

Clerical, Medical & General Life Assurance Society

Chief Office:
15 St. James's Square, London S.W.1
Telephone: WHitehall 1135

City Office:
36/38 Cornhill, E.C.3.
Telephone: MANsion House 6326

THE MUNDESLEY SANATORIUM

NORFOLK.

Resident Physicians:

E. C. WYNNE-EDWARDS, M.B. (Cantab.), F.R.C.S. (Edin.)

GEORGE H. DAY, M.D. (Cantab.)

Terms from 10½ guineas weekly

For all information apply the Secretary:
The Sanatorium, Mundesley, Norfolk

UNIVERSITY EXAMINATION POSTAL INSTITUTION

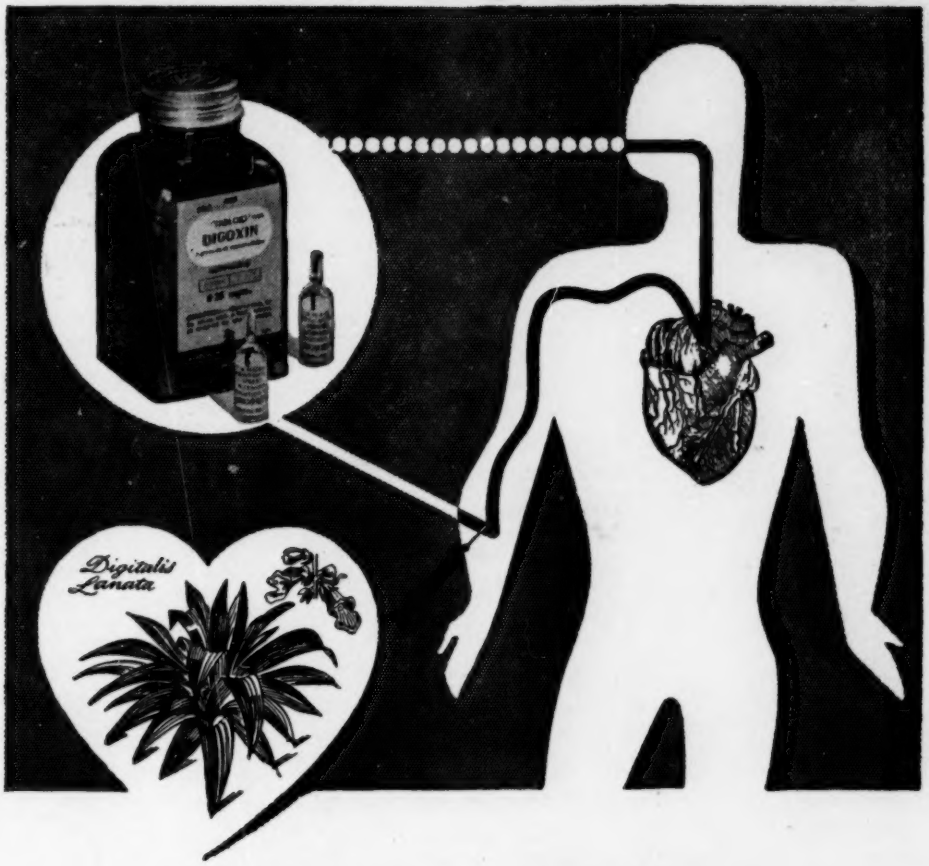
17, RED LION SQUARE, LONDON, W.C.1
G. E. Oates, M.D., M.R.C.P., London

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

SOME SUCCESSES GAINED BY OUR STUDENTS 1936-1948:

Final Qualifying Exams.	488
M.R.C.P. (London)	187
Primary F.R.C.S. (Eng.)	204
Final F.R.C.S. (Eng.)	120
F.R.C.S (Edin.)	37
M.D. (Lond.)	54
M. and D. Obst. R.C.O.G.	173
D.A.	163
D.C.H.	112
M.D. by Thesis	Many Successes

PROSPECTUS, LIST OF TUTORS, Etc., on application to:- THE SECRETARY, U.E.P.I., 17, RED LION SQUARE, LONDON, W.C.1. (Telephone HOLBORN 6313)



SAFETY and CERTAINTY

For initial digitalisation or for maintenance, Digoxin produces the desired result quickly, safely and with certainty. Being a single crystalline glycoside of definite composition and potency, it ensures a degree of accuracy unattainable with digitalis leaf products. Orally, Digoxin is effective in a few hours; intravenously, in a matter of minutes. It is particularly suitable for maintenance in the ambulant patient because the dose may be adjusted precisely, and risk of toxic effects is reduced.

'Tabloid' brand Digoxin, 0·25 mgm., for oral use; 'Wellcome' brand Sterile Alcoholic Solution of Digoxin (for the preparation of Injection of Digoxin).

DIGOXIN 'B.W.&CO.'

BURROUGHS WELLCOME & CO. (*The Wellcome Foundation Ltd.*) LONDON

SEX HORMONES

When B.D.H. is specified the prescriber ensures that a product of the utmost reliability is supplied. The range of B.D.H. Sex Hormone Products completely covers the field in this branch of therapeutics.

ANDROGENS

Parenteral

Testosterone Propionate* B.D.H.

Oral or sublingual

Methyl-testosterone B.D.H.

PROGESTOGENS

Parenteral

Progestin B.D.H.*

Oral or sublingual

Ethisterone B.D.H.

ŒSTROGENS

Parenteral

'Oestroform'*

Oral or sublingual

Ethinyl Œstradiol B.D.H. 'Estigyn'

Dienœstrol B.D.H.

Stilbœstrol B.D.H.

Hexœstrol B.D.H.

'Oestroform' Tablets

GONADOTROPHINS

Parenteral

'Gonan' (Chorionic Gonadotrophin)
'Serogan' (Serum Gonadotrophin)

**Also available as pellets for implantation*

Literature is available on request

MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.1

TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON

BHor/E/903

Editor: M. BRAIMBRIDGE
The Exoma Press, Ltd., N.1. 255/7 Liverpool Rd.,